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Message....



I whole heartedly congratulate the Editorial Board & other staff members & students of Babe Ke Ayurvedic Medical College & Hospital who made it possible that 1st edition "Amrit Sanchar" is going to be released. This is a perfect opportunity to the doctors to narrate their talent other than academic records. I am sure that the Journal will have substantial and interesting reading materials to cover various spheres of medical science.

I am sure such activities invigorate the overall growth of our ancient science.

Sant Baba Kapoor Singh Ji

(President)

***Babe Ke Ayurvedic Medical College & Hospital,
V.P.O. Daudhar (Moga)***

Message....



I am glad to know that Babe Ke Ayurvedic Medical College & Hospital, Daudhar (Moga) is bringing out its health based Journal "Amrit Sanchar". To acquaint and to create awareness amongst the masses with conceptual approach on the latest research and techniques, publishing of journals is the surest way. Moreover, I feel that it is a look forward towards advancement of Herbal and Ayurveda growth.

I hope that the college will continue with this practice for the cause of healthcare and longevity. I congratulate the management, staff and students for their noble idea and wish the journal all success.

Dr. S.S. Gill

(Vice Chancellor)

*Baba Farid University of Health Sciences
Faridkot (Punjab)*

Message.... 



I feel immense pleasure to know that Babe Ke Ayurvedic Medical College & Hospital is going to publish a Journal Amrit Sanchar which will contain valuable articles about Ayurveda . An endeavor by the college to publish such a Journal is really appreciable which will certainly help the medical professionals as the general public to enhance their knowledge in the field of medical and literary works.

I wish you all the very best.

Dr. Ashwani Sharma
Director of Ayush, Punjab

Message....



I am pleased to know that Babe ke Ayurvedic College & Hospital is publishing a Journal Amrit Sanchar. The College Journal provides a platform to the scholars and students to show cast their creative talent. I am sure that budding doctors would touch issues of interest in this issue of the Journal. My best wishes to the Editorial board, students, faculty and management of the college.

I wish you all the very best.

Dr. Rakesh Sharma
Director Ayurved Punjab
Sector-22, Chandigarh

Message....



I am pleased to know that our college is going to publish a health Journal "Amrit Sanchar". Information, education & communication are important measures essential to propagate the usage of our indigenous health knowledge. Resurgence of global demand for natural medicine has necessitated scientific explanation of Ayurvedic concepts, principles & approach. In this direction "Amrit Sanchar" is expected to go a long way in generating public awareness about the strength and potentials of Ayurveda. I hope, articles of Ayurvedic doctors from different fields would be immensely beneficial for the scientific deliberations.

My best wishes for grand success for this publication.

Dr. Rohin Sachdeva

(General Secretary)

***Babe Ke Ayurvedic Medical College & Hospital,
V.P.O. Daudhar (Moga)***

Message....



I feel elated to know that our college is going to publish health Journal "Amrit Sanchar". As you are well aware, Ayurveda is passing through an important stage in its history. This ancient mode of treatment has won worldwide recognition. Many people from different parts of the world are turning to Ayurveda for healing their ailments. This gives us great satisfaction. At the same time, this adds to our responsibility. We have to satisfy the aspirations of the new generations. It is possible only by keeping constant vigil on quality of our education and improving our knowledge based on continuous evaluation and research. The proposed publication will contain various activities of Ayurvedic Education & Research and various knowledgeable articles by scholars.

I wish all success for this publication.

Dr. Uma Sachdeva

(Director)

*Babe Ke Ayurvedic Medical College & Hospital,
V.P.O. Daudhar (Moga)*

Message....



I feel proud to present this 1st edition of "Amrit Sanchar". Such a publication is an important organ of an Institution. It helps us in projecting and promoting the activities of the college. Time & Tide wait for none! God has his own ways of making human beings realize, how to what we are. No goal is too big and no aim is too distant. If we are determined in our resolve we can achieve everything. Our students maintained the tradition by earning laurels in academic & sports field. We have done a lot but still there is too much to be done. Staff, Management & most of the students have always put in their best to make our college stand apart with dignity & pride. I look forward for the same support & Cooperation in the years to come. Respect has to be earned & we have always worked hard for it. Always remember the three R'S Respect for self, Respect for others, responsibility for all your action. You must always strive for perfection but may settle for excellence.

I wish you all the very best.

Dr. Vijay Verma

(Principal)

***Babe Ke Ayurvedic Medical College & Hospital,
V.P.O. Daudhar (Moga)***

Editorial Desk

Ayurveda is India's traditional natural system of Medicine, (Science of life or practices of longevity) conceived and developed by great sage physicians through thousand of years of observations, experiments, discussion and meditation.

Ayurveda emphasizes prevention of diseases, rejuvenation of our body systems and extension of life span. The profound principles of Ayurveda state that by following the practices delineated in Ayurveda, one can live a long, healthy and meaningful life, achieve fullest potential and express true inner nature on a daily basis.

According to Ayurveda the mind and the body (physical mass) not only influence each other, rather they are considered to be each other. There can be no mental health without physical health and vice versa. Our whole life and lifestyle must be in harmony with nature and natural laws and rhythms.

Ayurveda's practical side, specifically it's guidelines for an intelligently regulated diet (Pathya), daily routine (Dincharya) seasonal routine (Ritucharya), techniques for stress management (Yoga & Meditation) and exercises (Vyayam) for increased fitness and alertness that helps us to take control of our lives and develop radiant health. The central goal of Ayurveda is nothing less than a state of perfect health for the individual and for the society and environment as well.

One can lead a healthy and meaningful life by following a few principles in life which are delineated below.

(1)FEEDING HABITS:-

Feeding the body right type of food in right proportion at right time. A sattvic type of diet

Live A Healthy And Meaningful Life

containing low amount of fats and sugar, liberal amount of fresh fruits and vegetables, spouted cereals and legumes and sufficient amount of good quality proteins in accordance with one's age is generally sufficient for keeping good physical health. In persons having some chronic ailment or in old age, additional amount of vitamins, minerals, antioxidants or herbal/mineral rasayan drugs like chyavanprash, Amalki Rasayan, Brahma Rasayan, Giloye, Shilajeet etc. may be added according to one's problems.

(2)GOOD SOUND SLEEP:-

A good sound sleep is best potion one can have for a healthy body. Generally the stress and strains of life and illnesses may not allow us to have a sound sleep. We can confront insomnia by relaxation techniques, meditation, reciting any favorite mantra, listening to music, doing adequate exercise and stopping worrying for the whole day. Instead we may fix 10-15 minutes of time everyday to gloss over all the worries of the day rectify them to our potential.

(3)BODY NEEDS MOVEMENT:-

Exercise is the key part for being healthy. It not only keeps off excess weight but also makes our body more flexible, builds better bones, strengthens immune system and prevents almost all diseases including depression and insomnia. Regular physical exercise like walking, jogging, cycling, swimming, yoga exercises, playing some games help us to change our flabby body to a sleek, strong and solid frame. One must perform some exercise for at least one hour for 4-5 days a week to take control of one's body.

(4)RECHARGE THE SPIRIT:-

If one is continuously stressed, works long

hours & has no time for oneself then his health is bound to suffer. We must recharge our spirit by shedding the stress and awaken our senses by relaxing our body and mind. Reducing work burden by postponing or eliminating some not so necessary work and cravings, by meditating, performing Pranayam and Dhyana, Aroma Therapy, taking a break from work, Spending quality time with family members and friends and playing with them can do wonders to keep the mind healthy.

(5) BOOST BRAIN POWER:-

One must strive to boost his brain power by reading good books, learning new words and concepts from magazines, journals, Encyclopedias, solving crosswords, enhancing knowledge and performing other mental activities. One can experience dramatic changes in short term and long term memory by these simple measures.

(6) EMOTIONAL NEEDS:-

Human beings are an amalgamation of three entities, physical, mental and emotional. In addition to physical & mental health it is equally important to have emotional fulfillment in life. One must realize that life will always contain hardships, so one must not keep his expectations too high. Different people have different emotional needs but a few things are common to all. One must learn to be contented, do one's job honestly, sincerely and try to enjoy his work. Human beings need to give and receive love from family members, friends and society, raise a family (if possible) do some charity work & strive to perform at least a few selfless actions every now and then, as goes the saying "Life is all about caring and sharing"

(7) PREVENT AND CONTROL DISEASES:-

As we age we may suffer from some diseases (Hereditary or caused by Negligence of Health) these diseases take away a big chunk off our quality time so one must try to prevent or

control them. If they continue to haunt us, we should try Non-Pharmaceutical means or herbal preparations to keep them under control.

(8) KEEP OFF INTOXICANTS:-

Human body is not made for consuming intoxicants like Alcohol, Drugs or Smoking. They take off years from our life and make us sick giving rise to many incurable diseases. All types of intoxicating substances must be completely stopped if one cares about one's health.

(9) LIVE AN ACTIVE AND INSPIRING LIFE:-

We must live our life actively. We must reflect or contemplate every now and then how life is going and what changes are required?

Right Drive and Dogged Determination are the key words and attitude.

5 D's Discipline, Devotion, Dedication, Duty and Determination can take us miles ahead in the race of life.

7 Words of success 'NEVER GIVE UP, NEVER NEVER GIVE UP'

An active life may not increase life span but it will certainly enhance quality of life.

CONCLUSION:-

There is a body of compelling scientific research which shows unequivocally that life can not only be extended well beyond what we thought possible, but also that our health and destiny are very much in our hands.

I am of firm belief that by adopting above mentioned steps one can shun diseases, make his life healthy & meaningful and enjoy every moment of this wonderful gift of Almighty.

Dr. Sunil Joshi

Professor

Babe Ke Ayurvedic Medical College & Hospital,
Daudhar (MOGA) Pb.

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Diabetes mellitus vis-a-vis Madhumeha in Ayurvedic Medicine: A Scientific consideration

* Panday, A.K. ** Singh, R.H.

Introduction:

Diabetes mellitus is one of the commonest and important metabolic disorders after obesity and thyroid disorders. It is an epidemic in many developing and newly industrialized nations. It is the most common endocrine disorder, caused by absolute lack of insulin or a relative lack of insulin that is insufficient to overcome insulin resistance. Its manifestations include hyperglycemia, other metabolic derangements, and long term damage to blood vessels, eyes, nerves, kidney, and the heart. It is a leading cause of cardiac death, nonfatal MI, heart failure and stroke. It is also the most common cause of adult blindness, end stage renal disease, non-traumatic leg amputation and neuropathy.

The recent years have shown a significantly rising trend in the incidence of this disease all over the world. India has not remained an exception and one finds that the incidence of diabetes mellitus is rising with an alarming rate. Approximately 150 million of people worldwide have diabetes; its number is projected by WHO to be double by the year 2025. Its incidence has been estimated to be around 15% of Indian population. The data published by the International Diabetes federation in the year 2006 the number of people with Type II diabetes in India is around 30.9 million and this is expected to rise to 69.9 million by 2025. WHO also has projected India

as the leading country in the world, as per diabetic concern. It is certain to be one of the most challenging health problems in the 21st century.

Diabetes mellitus vis a vis *Madhumeha* as described in Ayurveda is one of the oldest disease recognized since antiquity. It has been accepted by medical historians that diabetes mellitus was first known to Indians since pre-historic periods. But its actual cause is still unknown. The first recognized written text of human civilization, i.e., *Rg Veda* (1500BC) contains hymns which include description of various medical conditions including diabetes. In classical texts of Ayurveda diabetes mellitus is mentioned as a sub types of *Prameha*, *Mutratispravritaja Vikara* and complication of *Prameha*. Caraka has described *Prameha* as *Anusangi Vyadhi*. As per Cakrapanidutta *Anusangi* means *Punarbhavi* i.e. the disease which is very difficult to cure. *Prameha* comprises of a number of diseases with various physical and chemical changes in urine, on the basis of involvement of *DoSas* and *DuSas* in different clinical set up. Thus keeping in mind the etiopathology of the disease, it will be very clear that diabetes is a generalized metabolic disorder and it is not localized to the urinary tract pathology alone. However the secondary involvement of urinary tract is apparent in this disease. It is also believed that if not cured or

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treated properly in due course of time, *Prameha* changes into *Madhumeha* (Su.Ni. 3/62, A.H.Ni.10/20). Thus the information available in the classics of *Ayurveda* shows that diabetes mellitus vis a vis *Madhumeha* as a disease was well known to the propounders of *Ayurveda*.

Etiology:

- It is amazing that 7 century B.C. Ayurvedic texts like Caraka has been described high caloric diet and sedentary habit as an important causative factors of *Apathyanittaja Prameha*. (C.S.Ci.- 6/4)
- Susruta has been described genetic/hereditary factors of *Sahaja Pramrha* in terms of *Bija*, *Bijabhaga* or *Bijabhagavayava* (Su.Ci. 11/3).
- Beside these causative factors, Ayurveda has emphasized that anxiety, anger, worry, grief and similar other stress producing factors lead to the development of diabetes mellitus in susceptible individuals.

Pathological component in *Madhumeha* vis a vis diabetes mellitus

- | | |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.Dosa- | <i>Tridosa</i>
(specially <i>Kapha Dosa</i>). |
| 2.Dusya- | <i>Rasa, Rakta, Mamsa, Meda, Kleda, Majja, Oja, Sukra, Jala</i>
(specially <i>Meda</i>). |
| 3.Status of Agni- | <i>Jatharagni Vrddhi</i> due to increased function of <i>Samana Vayu</i> , this happens due to <i>Srotavarodha</i> .
Functions of <i>Dhatvagnis</i> and <i>Bhutagnis</i> (specially <i>Medoagni</i>) are also deranged in diabetes. |
| 4.Site of <i>Ama</i> formation- | At the level of <i>Jatharagni, Dhatvagnis</i> and <i>Bhutagnis</i> . |
| 5.Involvement of <i>Srotasa</i> - | Specially <i>Rasavaha, Medovaha</i> and <i>MÚtravaha Srotasa</i> . |
| 6. <i>Srotodusti</i> | <i>Atipravrtti</i> and <i>Sanga</i> . |
| 7. <i>Adhisthana</i> - | <i>Vasti</i> ie- urinary system. |
| 8. <i>Pratyatma Laksana</i> - | <i>Prabhutavilamutrata</i> . |
| 9. <i>Sancarasthana</i> - | <i>Sarvanga Sarira via Rasayani</i> . |
| 10. <i>Roga Marga</i> - | <i>Abhyantara</i> . |
| 11. <i>Vyadhi Svabhava</i> - | <i>Cirakari</i> . |
| 12. <i>Sadhyasadhyata</i> - | <ul style="list-style-type: none">• <i>Kaphaja-Sadhya</i>• <i>Pittaja-Yapya</i>• <i>Vataja-Asadhya</i> |

Table 1. Classification of diabetes mellitus:

Classification of diabetes mellitus is similar to that in other age groups.

I- In conventional medicine:	
	a). Type I diabetes (IDDM): It accounts for 5-10% of all cases. More common in early age group. <ul style="list-style-type: none"> ●Immune mediated ●Idiopathic
	b). Type II (NIDDM): It accounts for 90-95% of all cases. More common in middle and older age group. <ul style="list-style-type: none"> ●Insulin resistance ●Insufficient insulin production from pancreatic beta cells <p>The genetic predispositions along with behavioral and environmental risk factors are responsible for development of insulin resistance and diabetes.</p>
	c). Other specific types: <ul style="list-style-type: none"> ●genetic defect of beta cell function or insulin action ●drug or chemical induced ●disease of the exocrine pancreas ●endocrinopathies ●viral infections ●genetic syndromes sometimes associated with diabetes like- Down's syndrome, Turner's syndrome etc
	d). Gestational diabetes mellitus (GDM): It is defined as glucose intolerance that is first identified during pregnancy.
II- In Ayurveda:	
	1.Etiological- two types “ <i>Dao pramehau bhavatah- Sahajoapathyanimittasca.</i> ” Su. Ci. 11/3.
	a). Sahaja prameha: (patients of Type I) <ul style="list-style-type: none"> ●<i>Matripitribijadosakrita</i>, i.e. defects in- <ul style="list-style-type: none"> ○<i>Bija</i>- sperm/ ovum ○<i>Bijabhaga</i>- chromosome ○<i>Bijabhagavayava</i>- genes
	b). Apathyanimittaja prameha:(patients of Type II) It is caused by- <ul style="list-style-type: none"> ●faulty dietary habit ●sedentary life style ●lack of physical exercise ●psychological factors: worry, grief, anger, anxiety etc.
	2. Constitutional-2: <ul style="list-style-type: none"> ●<i>Sthula</i> (obese) <i>pramehi</i>: patients of NIDDM. ●<i>Krisa</i> (lean) <i>pramehi</i>: patients of IDDM.
	3. Dosic-3:Urinary Abnormalities. <ul style="list-style-type: none"> ●<i>Kaphaja</i>-10 types ●<i>Pittaja</i>-6 types ●<i>Vataja</i>-4 types
	4. Prognostic-3: <ul style="list-style-type: none"> ●<i>Sadhya</i>: curable ●<i>Yapya</i>: palliative ●<i>Asadhya</i>: untreatable

The clinical presentation of diabetes Mellitus:

The common characteristic features of diabetes mellitus as described in Ayurveda are *Prabhutamutrata* i.e.- polyurea and *Avilmutrata* i.e.- turbidity in urine. Besides this the following features are also seen in diabetes-

- Urine is astringent, sweet, pale and ununctuous (C.Ci. 4/44).
- Urine is just like honey in taste and color (S.Ni. 6/14).
- Diabetic body becomes sweetened which may be referred as hyperglycemia (A.H.Ni.10/18-21).
- Diabetics prefers sedentary life style (S.Ni.6/28).
- If *Ojas* is diminished, the diabetics becomes timid, weak, always worried, disorders of senses, loss of luster, and emaciated (C.Su. 17/73).

In conventional system of medicine young adult diabetics have classical presentation, like- polyuria , polydipsia, polyphagia, joint pain, weakness. While its clinical presentation in the elderly is notably different than the adults. In elder age group it presents in the following ways-

1. Some patients have atypical presentation-i.e. Fatigue, pruritus vulvae, incontinence of urine and stool along with weight loss.
2. Some patients have classical presentation with other common symptoms- i.e.- Polyuria , polydipsia, polyphagia, joint pain, blindness, dizziness, balanitis etc.

Some patients have serious complications- i.e. Hyperosmolar-ketotic coma, diabetic Keto-acidosis, hyperglycemia, hypoglycemia. Some patients may be detected with coexisting diseases, like- Cataract, Glaucoma, PVD, CVD, CVA, Nephropathy, neuropathic pain and ulceration.

Complications of diabetes mellitus:

In Ayurveda thirst, diarrhea, fever, burning sensation, debility, anorexia, indigestion, gangrene, boils, carbuncles, ulcers, abscess etc are described as general complication.

Hyperglycemia in the diabetic is an important health care problem; even milder degree of glucose intolerance enhances the morbidity risk in diabetics.

Acute complications:

- 1.Diabetic ketoacidosis
- 2.Hyperosmolar coma
- 3.Hypoglycemia

Chronic complications:

Micro-vascular

- 1.Retinopathy- 25% in the diabetics.
- 2.Neuropathy- Proximal motor neuropathy
- Autonomic neuropathy
- 3.Nephropathy

Macro-vascular

- Peripheral arterial disease
- Diabetic foot syndrome
- Cerebro-vascular disease
- Coronary heart disease

Others complications: Decreased resistance to infections

Skin changes
Poor wound healing
Cataracts, glaucoma
Infertility, depression, dementia etc.

Diagnostic criteria of diabetes mellitus:

It is broadly divided into two categories-

Clinical diagnosis: It is mainly based on the classical symptoms of diabetes along with complications and other coexisting diseases. They are- Polyuria, polydipsia, polyphagia, joint pain, impotency, incontinence of urine, fatigue, banalities, blurred vision, cardiac pain, neuropathy, nephropathy, ulceration, dementia, cognitive impairment etc. Besides this, history taking, general and systemic examination should be carried out to look for target organ involvement and to rule out other causes of diabetes mellitus. It may also be diagnosed during screening for some other disorder.

B. Laboratory diagnosis: The American Diabetes Association requires the presence of one of the following criteria for the diagnosis of diabetes (ADA-2006). Diabetes is diagnosed by measuring blood glucose levels.

It is diagnosed by three ways and each must be

confirmed on subsequent day. They are-
Classical symptoms of diabetes + casual
glucose concentration = 200 mg/dl.
Fasting plasma glucose (FPG) = 126 mg/dl.
2- hour plasma glucose (PPG) = 200 mg/dl
during on OGTT.

Glycosylated hemoglobin (HbA1c) test: It is an important glycemic parameter to assess the severity of disease in clinical practice. By this test plasma glucose can also be calculated. The expected values of HbA1c % is given in table6.

Table 2:

Category	Expected values in %
Non diabetic	4.5- <7
Good control	7- <9
Fair control	9-<10
Poor control	=10

< 1% rise in the HbA1c= 1.7mmole/l (30mg/dl)
increase in the mean glucose load>

Other laboratory tests included in diabetics:

In symptomatic individuals following laboratory tests are routinely performed to assess the therapeutic response and other associated complications, viz-

- Blood for - TLC, DLC, ESR, Hb%.
- Urine for glucose, protein, ketone bodies and microscopic examination for presence of pus cells.
- Blood sugar- fasting and PP.
- Glycosylated Hb- (HbA1c, it is <7% in normal individuals) for assessing the degree of glycemic control & monitoring treatment.
- Blood urea , Serum creatinine, Lipid profile, Serum cholesterol, CRP, NCV etc .

Evaluation of Type II diabetes: Each diabetic patient can be evaluated by-

- Eating pattern, nutritional status and body weight history.
- Symptoms related to diabetes mellitus.
- Laboratory tests and investigations related to diabetes mellitus.
- Frequency, severity and causes of acute complications.
- Symptoms and treatment of complications.
- Prior or current infections.

- Other medications that may affect blood glucose levels.
- Risk factors for atherosclerosis.
- History and treatment of other conditions, including endocrine and eating disorders.
- Family history of diabetes and other endocrine disorders.
- Life style, cultural, psychological and educational factors that influence the management.
- Tobacco, alcohol and controlled substance use

Goals of therapy:

- : to achieve normoglycemia and HbA1c at lowest possible level.
- : to eliminate symptoms related to hyperglycemia.
- : to prevent and treat acute complications.
- : to eliminate/reduce the long term micro and macro vascular complications.
- : to maintain the desirable body weight.
- : to achieve normal life style.
- : to attain utility towards family and society.
- : to educate for successful long term management.

The plan of management in the diabetics:

The optimal management requires a coordinated team approach aimed at intensive glycemic control, improving insulin sensitivity, treatment of dyslipidemia and hypertension, management of diabetes related complications and patient education.

Conventional Approach:

The elderly diabetics have varied co- morbid conditions and broad differences in functional status. Drug interactions are common in this age group and life expectancy varies. Hence the ultimate goal is not only to achieve the laboratory norms, but also to improve the quality of life. The cornerstone of the treatment in the elderly diabetics is similar to the other age groups, which consist of-

1. Diet Individualized
2. Diet + exercise
3. Diet + exercise +oral hypoglycemic drugs
4. Diet + Insulin- (subcutaneous injection).

General instruction to the diabetics during exercise.

- Check blood glucose levels before and after exercise.
- Carry some sort acting sugar to treat hypoglycemic episodes.
- Drink extra sugar free liquid before, during and after exercise.
- Keep a diabetic information card in the pocket.
- To make a phone call in case of an emergency.
- Stop exercise if pain develops in legs or chest and notify to the physician.
- Inspect feet for cuts, blisters, callouses before and after exercise.
- Stop exercise in case of acute medical or surgical illness.
- Too elderly patients should never go for exercise without supports.
- Brisk walking and vigorous exercise is generally avoided,

General guidelines for diet in diabetics: Dietary measures are required in the treatment of all diabetic patients to achieve the over all therapeutic goal.

Table 3. Dietary recommendation

Food composition		Recommendation
Carbohydrate	–	40-50% of total calories. To encourage complex carbohydrates.
Protein	–	15-25% of total calories. Avoid cattle meat and eggs.
Fat	–	25- 35% of total calories. Total fat intake in the form of cholesterol is <200mg/day.
Fruits	–	fresh fruits up to 400g/day. Avoid juices.
Fibers	–	30-40gm/day preferably from natural sources.
Common salt	–	up to 6-8g/day. Reduce intake of to 4g/day in presence of hypertension, renal failure and
Condiments & spices	–	cardiac problems. included in diet plan, they provides antioxidants, trace
Artificial sweeteners	–	element, minerals etc.
Alcohol	–	try to avoid it and use <i>Stevia</i> , <i>Madhuyasthi</i> as natural sweetener.
Tobacco	–	if possible, it is totally avoided. avoid its use in any form.

Table 4. Treatment target for elderly diabetics is given below.

Category	Normal	American diabetic association target
Glycemic control	<6.0	<7.0
HbA1c%	<100	90-130
Fasting glucose	<140	<180
Post prandial glucose		
Blood pressure (mm of Hg)	<120/80	<130/80
Lipids (mg/dl)	Varies	<100
LDL	<150	<150
Triglycerides	>40 mg/dl	>40 mg/dl
HDL		

The guidelines for ongoing medical care in the elderly diabetics;

- Self monitoring of blood glucose.
- HbA1c testing -2-4 times per year by an endocrinologist.
- Patient education in diabetes management (annual).
- Medical nutrition therapy and education (annual).
- Eye examination annual by an eye specialist.
- Foot examination (1-2 times per year by physician, daily by patients).
- Screening for diabetic nephropathy (annual).
- Blood pressure measurement (regular).
- Lipid profile (annual).

If the target response of treatment is not achieved and complications may also persist, now assess it and refer to respective specialists, like- endocrinologist, cardiologist, nephrologist, neurologist etc for the assessment of severity of disease, and management strategies.

Ayurvedic Approach:

Therapeutically diabetic patients have been categorized into two groups depending upon the physical strength and involvement of *Dosa* and *Dusya*. (C.S.Ci.-6/15)

1.Santarpana measures:

In *Krisa Madhumehi* i.e.- lean and thin diabetics.

In *Vataja Madhumehi* i.e.- patients of type -I diabetes.

In *Vataja Madhumehi* associated with complications

2.Apatarpana measures: In *Kaphaja* and *Pittaja Madhumehi* i.e- patients of type-II diabetes.

Patients of type-II diabetes associated with complications.

The bio-purificatory(*Pancakarma*) measures, i.e.*Vamana, Virecana, Asthapana Vasti, Anuvasana Vasti* and

Sirovirecana are indicated to young adult but contraindicated to some extent in the elderly diabetics.

Beside these measures, *Caraka* has been advocated pacificatory measures such as decoctive preparations, powder of barley (*Yava*), and quantitative as well as qualitative light diet in the management of diabetic patients who are not suitable to *Samsodhana* measures.(C.S.Ci.-6/18) The over all management of diabetes mellitus vis a vis *Madhumeha* as mentioned in Ayurvedic classics can broadly be divided into three categories.

The treatments of Diabetic mellitus vis-a-vis *Madhumeha* as mentioned in *Ayurvedic* classics can be broadly divided into four groups-

●**Nidana parivarjana-** Avoidance of etiological factors, i.e.-faulty lifestyle, faulty dietary habit, mental stress, day sleep and awakening in night.

●**Ahara-** Diet is an important regimen for the control of diabetes mellitus. It is an important measure for the obese diabetics. Role of diet in controlling diabetes continues important as it was thousands of years ago. *Katu, Tikta, Kasaya Rasa, Usna, Laghu, Ruksa* properties of food are prescribed in diabetes. (C.S.Ci.-6/21)

Foods like *Yava* (barley), bitter, pungent, and astringent vegetables, meat of animals residing in hot climate and pulses/cereals like-Syamaka. *Kodrava, Uddalaka, Godhuma*, and *Kulattha* are to be taken by all patients of diabetes mellitus (*Sodhala K.C. Khanda*; 30: 41-42).

The food which is enriched with alcohol, milk, oil, *ghee*, flour, syrup, and meat of the animals which are residing in water or near water should be avoided (S.S.Chi; 11: 5).

●**Vihara-** The role of exercise has been emphasized by *Acarya Susruta* in the management of poor and rich diabetic.

●For poor diabetic- there is indication of light exercise and earn his living by begging.

●For rich diabetic there is indication of heavy exercise and earn his living by begging.

Recent evidences show that aerobic physical

exercise, meditative *Asanas* & life style management not only improve hyperglycemia but are also believed to improve the pancreatic and liver functions.

● **Ausadha/Ayurvedic formulations-**

Biopurificatory measures i.e. *Pancakarma*, are advocated in young adult but it should be avoided in the elderly diabetics. In the classics of Ayurveda a number of herbal, minerals and herbo-minerals drugs are advocated for the treatment of diabetes mellitus. But in general the drugs having property antagonistic to *Dosha* and *Dusya* like *Katu*, *Tikta*, and *Kasaya Rasa*, and having *Ojovardhaka* and *Rasayana* property are to be used in diabetic patients.

On the basis of physical strength of the patient and strength of disease following drugs are commonly prescribed as a single drug or in combinations or with compound drugs in Ayurvedic practice.

1. Single drugs preparations:

- *Amalaki Curna*- 8 gms in two divided doses.
- *Haridra Curna*- 8 gms in two divided doses.
- *Mamajjaka Curna*- 6 gms in two divided doses.
- *Suddha Silajatu*- 1 gm in two divided doses
- *Vijayasara Curna*- 4-6 gms in two divided doses.
- *Karvellaka Svarasa*- 20-40 ml in two divided doses.
- *Jambubija Curna*- 6-12 gms in two divided doses.
- *Guduci Svarasa*- 10 to 20 twice a day.

2. Compound drug preparations:

- *Basantakusamakara rasa*- 250 mg in two divided doses.
- *Pramehantaka Vati*- 500 mg in two divided doses.
- *Candraprabha Vati*- 1 gm in two divided doses.
- *Trivanga Bhasma*- 500 mg in two divided doses.
- *Madhukasava*- 40 ml in two divided doses with equal quantity of water.

3. Neoformulations: Tab. Hyponid, Diabicon, Amree plus and Amree plus granules etc.

In case of diabetic neuropathy:

- *Asvagandha Curna*/Tab- 6 gms/4 Tab in two divided doses.
- *Dasamuladi Taila* and *Prasarani Taila* for local application.

Diabetes associated with cardiac problems:

- *Puskarabrahmi Guggulu* Tab- 2 BD.
- *Arjuna Curna* 2 gms as a *Ksirapaka* twice in a day.
- Preparations of *Mukta* and *Pravala* -500 mg twice in a day.

Diabetes associated with renal problems:

- *Punarnava Svarasa*- 40 ml in two divided doses.
- *Punarnavastaka Kvatha*- 20 ml twice in a day.
- *Candraprabhavati*- 250 mg twice in a day.
- *Punarnava Mandura*- 500 mg twice in a day.

Diabetes associated with retinopathy:

- *Saptamrta Lauha*- 500 mg twice in a day.
- *Triphala Ghrta* as *Netra Tarpanartha* as well as orally in the dose of 2 gms/day.
- **Yoga therapy:** under care of a trained Yoga therapist.

Discussion:

At present time in conventional system of medicine it is possible to classify the diabetics into primary and secondary types as well as insulin dependent and non insulin dependent diabetes types. It is amazing to note that the knowledge of diabetes mellitus was almost equally advanced in ancient time of Ayurvedic classics. The Ayurvedic texts have described high carbohydrate diet and sedentary habit as important causative factors of *Apathyanimittaja Prameha*, while hereditary and genetic factors described as *Sahaja Prameha*.

Again the classics of Ayurveda categorizes the diabetics into two groups i.e- 1. *Sthula Pramehi*- obese diabetic and 2. *Krisa Pramehi*- lean and thin diabetic; in terms of the body constitution and body weight. These two types of diabetics have been described to be treated on two different lines of management. Obviously this insight of categorizing diabetics into genetic and acquired and further as thin

and obese is outstandingly scientific and it is comparable to the latest modern development in this field. While describing the pathophysiology of *Prameha* the Ayurvedic texts include *Medas* i.e. Adipose tissue and *Ojas* i.e. Immune components; as the major morbid factors. These two observations of the ancients again appear to be very outstanding information regarding the nature of the disease, which compares with the modern trends of medical science of today.

Conclusion:

No doubt modern medicine may have found a way to bring the cases of diabetes mellitus under control to some extent, yet the effort can not be considered as final. Even though majority of the patients remain well for certain period with the current therapeutic measures, the underside, however must not be lost sight. It is because of danger of complications such as-drug resistance, hypersensitivity and antagonist formation with insulin, drug intolerance, fear of hypo and hyperglycemic episode with Sulphonylureas. This seeks great attention from the present day practitioners and researchers to evaluate the present status of this chronic health hazard and to evolve newer strategies in their management. In this regard Ayurvedic drugs not only have *Pramehaghna* i.e.- anti-diabetic property but also have *Rasayana* effect i.e. Improve nutritional pool, *Ojovardhaka* effect i.e. immuno enhancer, *Jivaniya* effect i.e. longevity enhancer and *Balya* effect i.e. vitalizer. By virtue of these properties Ayurvedic drugs alone or in combination with modern medicine, have capacity to reduce the insulin as well as oral hypoglycemic drug requirement, prevent or delay the long term complications, and maintain over all health in elderly diabetics.

Finally we conclude that the information available in the classics of Ayurveda, regarding its etiopathology, symptomatology, types, complications and lines of management appear well comparable to the latest knowledge of contemporary system of medicine.

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Role of Ashwagandha(Withania somnifera) as an Ayurvedic Rasayan Drug in the Management of AIDS

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Introduction:

The Acquired immunodeficiency syndrome was first recognised in 1981 and is caused by the human immunodeficiency virus (HIV-1). HIV-2 causes a similar illness to HIV-1 but is less aggressive and restricted mainly to Western Africa. In 2000 WHO estimated that there were over 36 million people living with HIV/AIDS, 5.3 million new infections and 3 million deaths. India has about 5-7 million people infected with HIV/AIDS. Mumbai city alone has about 5.1 lakh HIV+ cases, 26% of which are women. These data convey that it's really an alarming condition & now it's a big challenge for our society and we can't afford to take our feet off the pedal. We have to think about it.

Ayurveda, the science of life has two chief goals i.e. the maintenance of health and well being of the healthy person and cure of disease in an ailing person.(Ch.Su.30/26)

Rasayan is one of the specialized branches of Ayurveda, which can prove as a milestone in journey of AIDS treatment.

Mode of Transmission:

HIV is present in blood, semen and other body fluids such as breast milk and saliva. The major modes of infections are sexual, infected needles and vertical. World wide the major route of transmission (70%) is heterosexual. About 5-10% of new HIV infections are in

children and more than 90% of there are infected during pregnancy, birth and breast-feeding.

Immunopathogenesis of HIV Disease:

Profound immunosuppression, primarily affecting cell-mediated immunity is the hallmark of AIDS. This results chiefly from infection and subsequent loss of CD4+T cell as well as an impairment in the function of surviving helper T cells as discussed in subsequent paragraphs, Macrophages and dendrite cells (Important in CD4+ T Cell Activation) are also target of HIV infection. The CD4 molecule is a high affinity receptor for HIV. This explains the selective tropism of the virus for CD4+ T cells and its ability to infect other CD4+ T cells particularly macrophages and dendrite cells. However finding of CD4 is not sufficient for infection. The HIV envelope gp 120 must also find other cell surface molecules (co-receptors) to facilitate cell entry.

Role of Ashwagandha in National AIDS Management Programme:

Rasayan can play an important role in National AIDS control Programme .The word Rasayan is derived from two words i.e. Rasa and Ayan "Rasa" means rasadi sapta dhatu and "Ayan" means path or way.

According to Charaka Rasayan therapy is a method, which increases longevity, memory,

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intellect, lusture, complexion, voice, strength of body and sense organs, provides resistance to disease, improves glow and power. (Ch. Chi. 1/1/7-8)

According to Sarngadhara the drug, which delays ageing and prevents diseases is known as Rasayan. Bhavaprakasha defined the term Rasayan as the therapy, which alleviates vyadhi (Jara). There are so many Rasayan drugs described in our Ayurvedic literature which are responsible to improve immunity and increase life span. Ashwagandha (*Withania somnifera*) is one of them

Properties of Ashwagandha:

Rasa	-	Tikta, Kashaya
Guna	-	Laghu, Ushna
Virya	-	Ushna
Vipaka	-	Madhur
Prabhav	-	Rasayan

As Rasayan :

It is taken with milk, ghee, oil or water for a fortnight. It promotes the development of body. (AH.U.39/157.)

One who takes powder of Ashwagandha root in late winter mixed with honey and ghee along with milk regains youthfulness even if old.(R.M.33/11)

Ashwagandha has Immunomodulator property. It increases the number of Immune cells-known as T cells & B cells helping to fight infections.

It is found to increase red blood cell count, improve the haemoglobin level, increases endurance, stamina & increases weight.

A work has been done entitled "A comprehensive study of different type of

Ashwagandha with special reference to Rasayan Karma" to know the efficacy of ashwagandha as an immunomodulator drug.

Material & Method:

- Drug = Ashwagandha root powder
- Dose = 5 gm B.D
- Vehicle = Warm water
- Drug duration = 45 days

Clinical study:

30 patients who were registered in O.P.D. & I.P.D. of Govt. Dhanvantari Ayurvedic Hospital Ujjain were selected and randomly divided them in three groups. Each group has 10 patients.

Group A: 10 Patient of this group were administered Wild Ashwagandha churna 5 gm B.D.

Group B: 10 Patient of this group were administered Cultivated (Mandausar) Ashwagandha churna 5 gm B.D.

Group C: 10 Patient of this group were administered Nagauri Ashwagandha churna 5 gm B.D.

The following criteria were taken for assement.

Subjective parameter:

Smriti , Medha , Nidra, Chinta, Utsah , Svaraudarya, Kanti, Bala, Kshudha, Angmard.

Objective parameter:

Serum Immunoglobulin (Ig G) , CBP, Lipid profile , Weight , Routine urine, Routine stool.

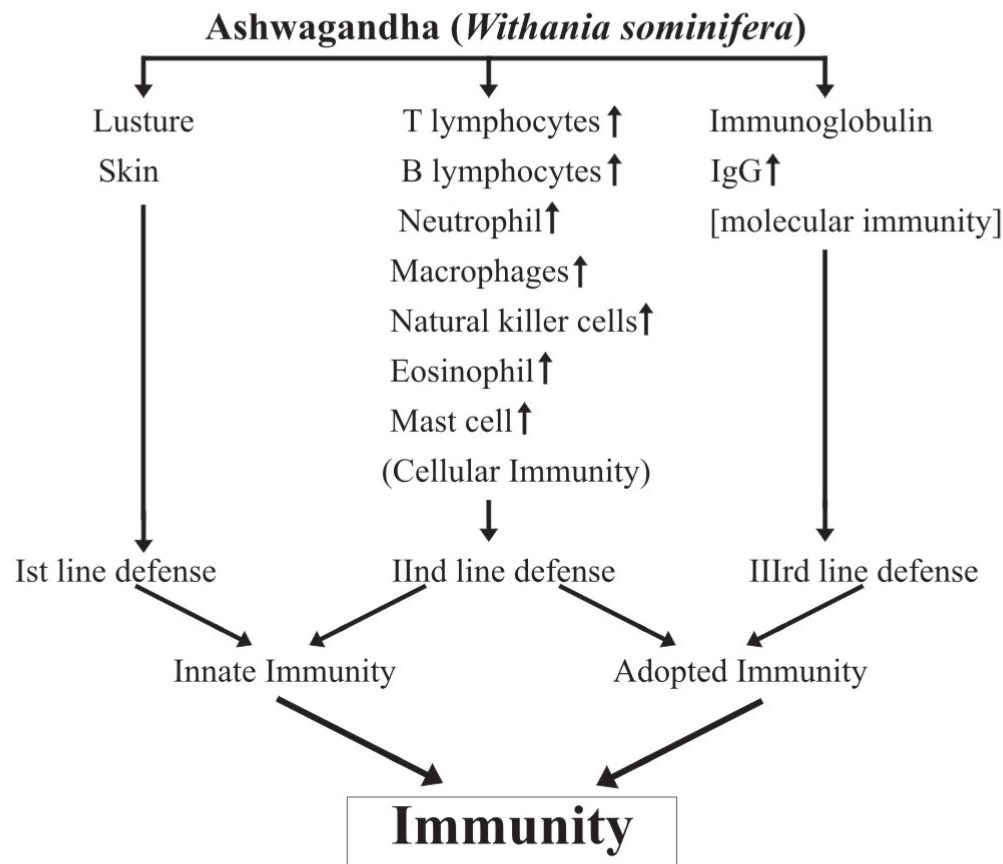
Total % relief on all subjective parameter

Investigation	Group A			Group B			Group C			Total
	B.T.	A.T.	% of relief	B.T.	A.T.	% of relief	B.T.	A.T.	% of relief	
Smiriti	2.2	1.5	31.82%	2.2	1.4	36.36%	2	1	50%	39.9
Medha	2.2	1.5	31.82%	2.1	1.4	33.33%	1.9	1.1	42.11%	35.75
nidhra	0.5	0.1	80%	0.3	0.1	66.67%	0.6	0.1	83.33%	76.67
chinta	2.3	1.2	47.83%	2	0.7	65%	2.1	1	52.38%	55.07
utsah	2	.8	60%	1.7	0.6	64.71%	1.3	0.6	53.85%	59.52
svaraudarya	1.4	0.9	35.71%	1.4	1.1	21.43%	1.3	1.1	15.39%	24.18
kanti	1.6	0.9	43.75%	1.8	0.8	55.56%	1.4	0.6	57.14%	52.15
bala	1.9	1.1	42.11%	1.4	0.4	71.43%	1.3	0.5	61.54%	58.36
kshudha	1.4	0.3	78.57%	0.7	0	100%	0.9	0.1	88.89%	89.15
angmardha	2.1	1.1	47.62%	1.6	0.8	50%	1.6	0.8	50%	52.54

Total % Change in Objective parameter

Investigation	Group A			Group B			Group C			Total
	B.T.	A.T.	% of change	B.T.	A.T.	% of change	B.T.	A.T.	% of change	
IgG	11.52	12.38	7.44 ↑	11.00	12.12	10.19 ↑	12.82	12.79	0.21 ↓	5.81 ↑
Hb	12.00	13.05	8.75 ↑	13.50	13.85	2.59 ↑	13.35	13.90	4.12 ↑	5.15 ↑
RBC	3.75	4.15	10.67 ↑	4.37	4.25	2.75 ↓	4.22	4.21	0.24 ↓	2.56 ↑
WBC	70.10	76.50	9.13 ↑	73.20	75.40	3.01 ↑	75.00	78.40	4.50 ↑	5.55 ↑
Neutrophils	57.30	57.90	1.05 ↑	56.40	57.10	1.24 ↑	56.80	58.10	2.29 ↑	1.53 ↑
Eosinophils	0.6	0.0	100 ↑	0.3	0.6	100 ↑	0.3	0.6	100 ↓	33.33 ↑
Basophils	0	0	0	0	0	0	0	0	0	1.04 ↓
Lymphocyte	41.6	41.4	0.48 ↑	41.8	41.4	0.96 ↓	41.9	41.2	1.67 ↓	24.45 ↓
Monocytes	0.5	0.7	40.00 ↑	1.5	0.8	46.67 ↓	1.2	0.4	66.67 ↓	0
Platelets	2.80	2.84	1.43 ↑	2.96	2.98	0.68 ↑	3.03	3.1	2.13 ↑	1.47 ↑
E.S.R.	14.4	11.0	23.61 ↓	8.1	7.7	4.94 ↓	9.3	9.0	3.23 ↓	10.60 ↓
S.Proteins	7.17	7.59	5.86 ↑	7.38	7.40	0.27 ↑	6.95	7.65	1.07 ↑	5.4 ↑
S. Albumin	3.96	4.39	10.86 ↑	3.95	4.12	4.30 ↑	3.68	4.26	15.76 ↓	10.31 ↑
S. Globulin	3.20	3.20	0	3.48	3.28	5.75 ↓	3.67	3.39	7.63 ↓	4.46 ↓
S. Cholesterol	186.1	190	2.10 ↑	177.7	187.8	5.68 ↑	188.3	195.4	3.77 ↑	3.85 ↑
HDL	43	42	2.33 ↓	43.9	42.6	2.96 ↓	41.5	42.5	2.41 ↑	0.96 ↓
LDL	125.3	128.3	2.39 ↑	116.9	127.3	8.90 ↑	130.2	134.6	3.38 ↑	4.89 ↑
Triglycerides	86.9	87.1	0.23 ↑	82.6	87.6	6.05 ↑	84.3	89.0	5.58 ↑	3.95 ↑
Pus Cell (Stool)	2.45	1.8	26.53 ↓	2.5	1.95	22 ↓	1.65	1.5	9.09 ↓	19.21 ↓
Epethial Cell (Urine)	2.9	1.2	58.62 ↓	3.0	2.3	23.33 ↓	3.0	2.25	25.00 ↓	35.65 ↓
Pus Cells	2.3	1.65	28.26 ↓	3.0	1.2	60 ↓	1.65	1.65	0	29.42 ↓
Body Weight	47.8	49.8	4.18 ↑	49.2	50.9	3.46 ↑	55.2	56.8	2.90 ↑	3.51 ↑

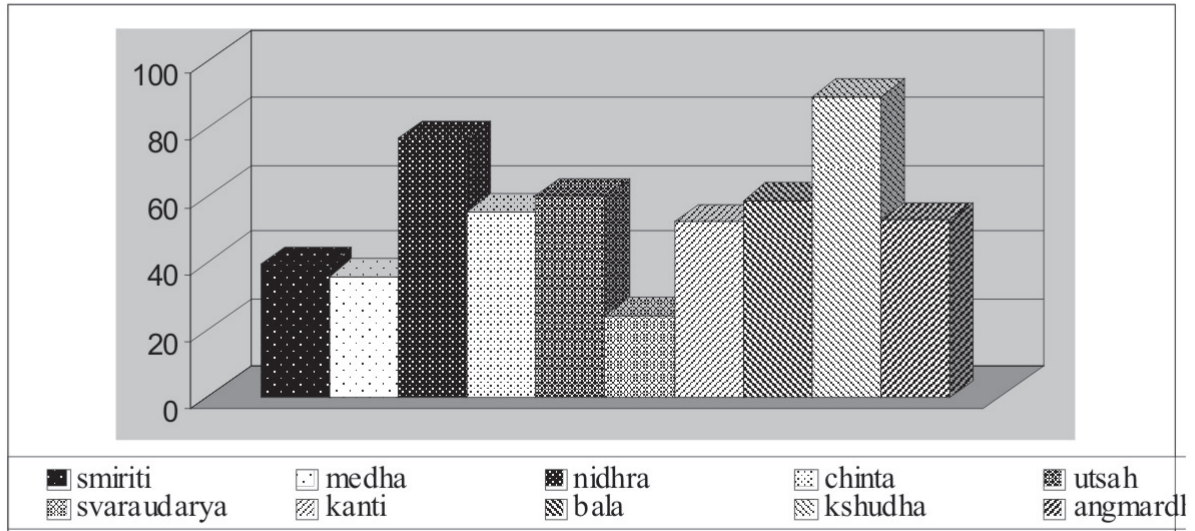
It is clear by above table that IgG increases after treatment up to 5.81 %, Hb 5.15%, RBC 2.57%, WBC 5.56%, Neutrophil 1.53%, Eosinophil .01%, Lymphocytes 1.03, Weight 3.59% and all these parameter are include of in cellular & humoral immunity.



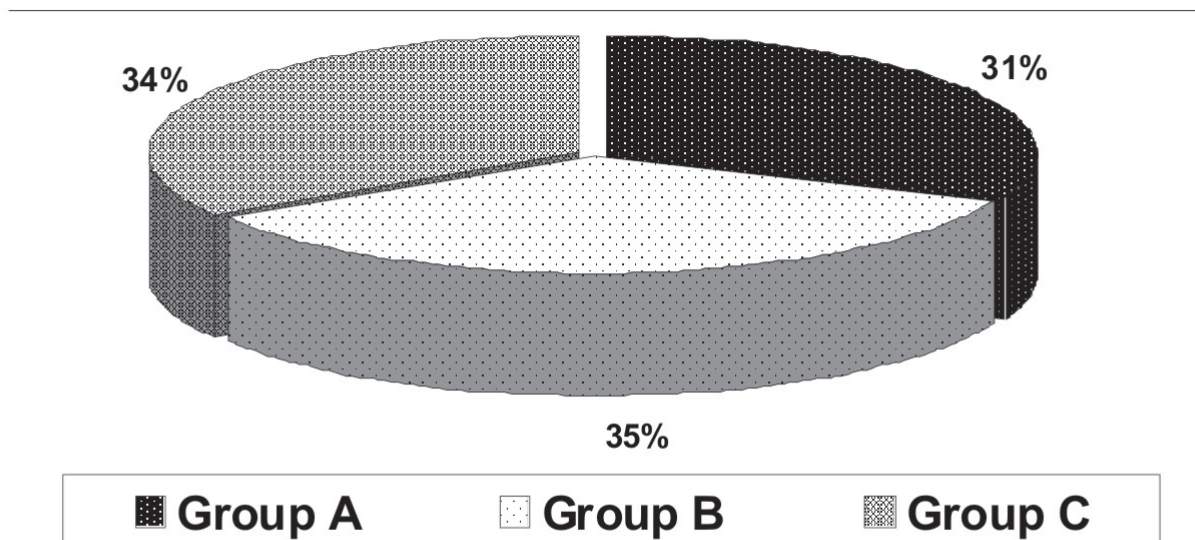
Conclusion:

Ashwagandha [*Withania somnifera*] increases Ist line defence, IInd line defence, IIIrd line defence & immunity. Immunity plays a contributory role to increase life span. An HIV positive patient has less immunity as compared to a healthy person. It is proved through different researches that Ashwagandha plays an important role to increase immunity as well as acts as an anti-oxidant. Ashwagandha can be prescribed along with modern Anti Retrovirus Therapy for the management of AIDS to improve quality of life and increase life span of the patients.

Graph Showing on Total % Relief in Subjective Parameters



Comparative % relief in subjective parameters



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22.Hutchison's clinical methods - Edited by michael swash, 21st edition

Isolation and Quantification of Yohimbine alkaloid from the leaves of Rauvolfia tetraphylla- An aphrodisiac plant

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Abstract : In the present work, the qualitative and quantitative analysis of the leaves of *Rauvolfia* species is presented using different analytical approaches. In this analytical study we are taken the methanol extract of leaves, bark stem and roots and yohimbine as standard. The compression has been done by HPTLC. The quantization of yohimbine was then accomplished by WINCATS software with densitometry detection (CAMAG TLC SCANNER-3). The present technique allowed different separation profiles that can be useful in other phytochemical characterization of the various parts of the plant. The linear calibration ranges were all 10-1000 g/ml for yohimbine. Yohimbine was detected only in the leaves of plant in 6.11 %. The HPTLC methods were successfully validated and applied to the quantization of yohimbine.

Keywords: Alkaloid HPTLC *Rauvolfia tetraphylla* yohimbine.

Introduction:-

An aphrodisiac is defined as any food or drug that arouses the sexual instinct, induces sexual desire and increases pleasure and performance. There are two main types of aphrodisiacs, psycho physiological stimuli (visual, tactile, olfactory and aural) preparations and internal preparations (food, alcoholic drinks, & drugs). Although there are many aphrodisiac in the market, there is no scientific evidence that most of them work. ***Although yohimbine has been extensively used by men to enhance sex drive and approved by many food and drug authority.***

Rauvolfia is a genus of evergreen trees and shrubs in the Apocynaceae family. The approximately 85 species in the genus can mainly be found in tropical regions. *Rauvolfia tetraphylla* and *Rauvolfia serpentina* is the South African quinine plant species. *Rauvolfia*

tetraphylla contains a number of bioactive phytochemical. The *Rauvolfia* species is mainly known for its phytochemical reserpine, which was widely used as an antihypertensive drug. But very little research has been published on the presence of yohimbine in the plant *Rauvolfia tetraphylla*, which is one of the major phytochemical for aphrodisiac activity. ***In our present work our aim is to investigate the plant for its aphrodisiac property.***

A.s. belikovin (1969) had extracted the alkaloid from the root with 5% acetic acid, base were precipitated with ammonia and extracted with chloroform by thin layer chromatography with silica gel and 15 % of gypsum, and mobile phase was the chloroform-ethanol (9:1) system. They estimated the total alkaloid contents, which were 3.1 -4.3 % in the roots of *Rauvolfia canescens* and in its

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epigeal part the alkaloids contents was 1.9- 2.4 %.

Lakshmi S. R. Arambewela et al (2001) studied on alkaloids from *Rauvolfia canescens*. Ten indole alkaloids, ajmaline, yohimbine, a-yohimbine, isoreserpine, corynanthine, deserpidine, reserpiline, isoreserpiline, aricine, and a new alkaloid, named lankanescine, have been isolated and identified from *Rauvolfia canescens*.

J. D. Kohli et al studied on pharmacological action of rauwolscine. Rauwolscine (kindly supplied by Mrs. A. Chatterjee, university college of science and technology, Calcutta), an alkaloid of *Rauvolfia canescens* linn, had been found to be a potent adrenolytic compound. It had further been shown to be -yohimbine. Yohimbine is an adrenergic blocking alkaloid. **Jurg a.**

Schneider et al (1955) worked on the pharmacological studies with deserpidine as a new alkaloid from *Rauvolfia canescens* . Owen et al., 1987 reported the metabolic effect of yohimbine in human body. Since they observed that yohimbine was stable in blood, the rapid clearance of yohimbine from human plasma suggests metabolism of the drug by an organ with high blood flow, such as liver or kidney, and high extraction efficiency. Yohimbine may also interact with alpha-1-adrenoceptors and, in high concentrations, serotonin and dopamine receptors (dukes, 1988). Yohimbine has monoamine oxidase inhibitory effects (Bhattacharya et al., 1991).

Aims & Objectives:

The aim of our present research is the extraction, isolation and identification of the alkaloid yohmbine from the leaves, root and stem of *Rauvolfia tetraphylla* and **further quantitation of** alkaloid yohimbine in the leaves, root and stem of *Rauvolfia tetraphylla* by **HPTLC method.**

Material and methods:

EXPERIMENTAL

General Experimental Procedures: All solvents used for extraction and chromatography were of high performance liquid chromatographic (HPLC) grade.

Collection and Botanical identification of plant: The plant material viz. Root, stem leaves and seed of *Rauvolfia tetraphylla* (family Apocynaceae), were collected from Divya Nursery near Patanjali Yog Peeth, Haridwar in September 2008 and authenticated by the approved botanist. Voucher specimens were deposited in the herbarium of Divya Pharmacy.

Extraction of selective substance from entire mass of the sample: Each sample of Root, Stem, Leaves and Seed of *Rauvolfia tetraphylla* was taken in various organic solvents and finally methanol was selected for the selective extraction from the cell matrix of the Root, Stem Leaves and Seed of *Rauvolfia tetraphylla* samples. 1.5 g of the Root, Stem Leaves and Seeds were grinded separately to a homogeneous powder of 20 mesh size.

2. These crushed materials were taken in round

bottom flask and poured 10 ml methanol to dissolve the each sample material.

3. Centrifuges each sample at 6000 RPM (Remi KKK-35579).

4. The supernatant was collected and filtered from whatman no. 4 filter paper.

5. Removal of organic solvent.

6. The filtrate is ready for sampling for obtaining the active phytochemical from the leaves of *Rauwolfia tetraphylla*.

Chromatography conditions:

HPTLC Details for Total Phytochemical analysis:

Sample solution: 5 ml of supernatant solution of both the samples was spotted on coated silica gel 60 F254 TLC plate by **Camag linomat 5**.

Development system: we have tried many solvent systems but ultimately we get best result with **toluene: ethyl acetate: diethylamine (70: 20: 10)**

Stationery Phase: we have also tried four stationery phase but ultimately we get best result with pre coated silica gel 60 F254 TLC plate of 0.2 mm thickness

Sample Development in Mobile Phase: The plates were immersed vertical in development tank. Development is started and spots were allowed to migrate along with mobile phase after 1 cm onto the stationery phase up to 10 cm distance. The plates were then taken out from the development chamber.

Detection:

The typical chromatogram was evaluated for detection of the position of the solutes in UV at 254 and 366 nm and further by Densitometry

scan. The analysis done in triplets for the validation and reproducibility of the method.

Image of the chromatographic plate was taken at UV 366 nm by the Photodoc for visual documentation.

Results:

Quantification of Phytochemical in plant:

We have screened the total Phytochemical present in Root, Stem Leaves and Seeds of plant *Rauwolfia tetraphylla*.

The summary of HPTLC results for total phytochemical is represented in Fig-1 to Fig-8. Which showed as track 1st was stem part of the plant and had 12 bands, track 2nd was leaf extract of the plant and had 9 bands, Track 3rd fruit extract of the plant and had 0 bands, Track 4th was our reference sample yohimbine and had 4 bands, Track 5th root sample had 5 bands Track 6th was the solvent sample which had no bands at 366 nm. In densitometry scan by track 2nd was only exhibits the band for yohimbine at Rf.56.

Discussion:

Certain species are the source of valuable emetics and cathartics. The species *Rauwolfia tetraphylla* and *Rauwolfia serpentina* has received special attention as the source of tranquilizing drugs. Among the purified alkaloids obtained from *Rauwolfia tetraphylla* and *R. serpentina*, reserpine is perhaps the one most used as tranquilizing agents. Very little literature is published on the presence of yohimbine in the root *Rauwolfia* species. Yohimbine is the principal indole alkaloid derived from the bark of the yohimbe tree

(*Pausinystalia yohimbe*). For the first time we have reported the good amount 6.11% of yohimbine in the leaves of *Rauwolfia tetraphylla* whereas the quantity of Yohimbine in the stem, seeds and root of *Rauwolfia tetraphylla* was absent (Fig -7). **In UV abs spectrum in situ we see that the two spectra are different and hence they are not the same compounds.**

Yohimbine has monoamine oxidase inhibitory effects (Bhattacharya et al., 1991) and competitive antagonist selective for alpha 2-andrenoceptors, which are thought to be located on nerve terminals and receptors and to mediate inhibition of transmitter release. In our study, we characterized the yohimbine as major active principle in the leaves of *Rauwolfia tetraphylla* by HPTLC methods with one novel compound (Fig-7).

First time we tried to explain that leaves contain maximum phytochemical with major alkaloid yohimbine in comparison to the roots of *Rauwolfia tetraphylla* plant (fig-1).

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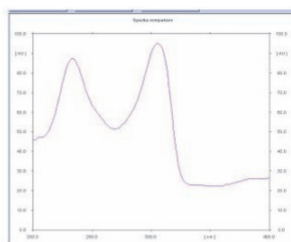


Fig-7 :- Spectra of New alkaloid detected only in the leaf of *Rauvolfia tetraphylla*

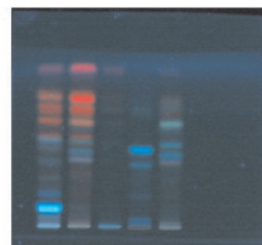


Fig-8 :- Track-1 to Track-2 represents the Fingerprint Chromatogram of Stem, leaf, Seed, Control (Yohimbium) and root parts of Plant *Rauvolfia tetraphylla*

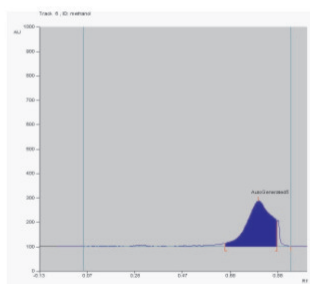
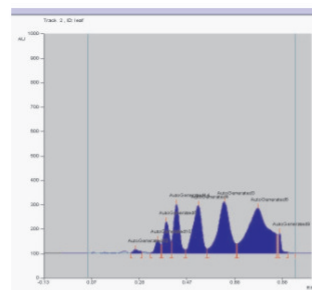
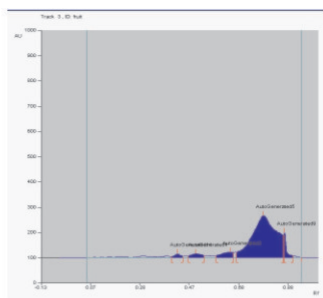
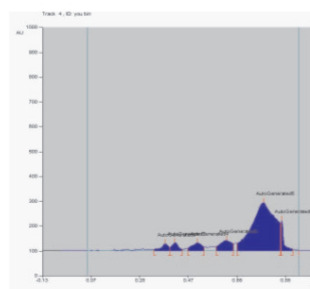
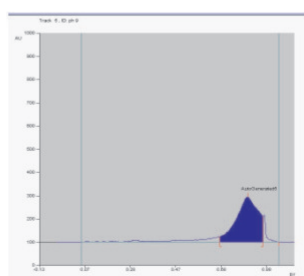


Fig 1-5: Quantitative representation of Phytochemicals

Lauha- A Historical Review In Rasa Texts

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ABSTRACT

Lauha is one of the dhatu mentioned in Rasa literature. It is said to be the best among all drug formulations, hence Lauha should be purified and incinerated before bringing into use. Although it is described in almost all the Rasa literature elaborately but the study comprises of history from Siddhayoga upto Rasamritam.

ETYMOLOGY

“धातुर्लोहे लुह इति मतः सोऽपि कषार्थवाची ।”¹
The word lauha is derived from its root 'Lauha' which means to pull on 'apakarshana' (लुंचनकर्षणे) So the metals which are extracted out from their respective ores are known as Lauha. Generally the word Lauha is applicable for all metals.

Definition of Dhatu²

“वली पलित खालित्य काश्याबल्यजरामयान् ।
निवार्य दधते देहं नृणां तद्वातवो मताः ॥

The Dhatu is defined as the substance which prevents wrinkles, premature graying of hair, baldness, emancipation (kaarsha), senility (jara) and disease conditions and thereby reinstate the potency and strength of the body. Thus the metal which will fulfill all the criteria mentioned above are termed as dhatu.

Siddhayoga

This was written by Vrinda in 975-1000AD. The process of killing Iron has been described. The Iron has to be heated to red hot and macerated in the juice of embolic myrobalan and Trewia nudiflora and exposed to sun. This is again macerated in the juice of certain other plants and then to be rubbed in a mortar³.

Rasahridaya Tantra of Bhikshu Govindabagavatpada

This was written by Bhikshu Govindabagawatpada and belongs to century. In this a total of ten dhatus have been enumerated under two groups.viz: 1.Sara Lauha- gold and silver and 2. Puti Lauha- tamra, ara, teekshana, kanta, abhrakasatva,

lauha, vanga and naga⁴. The Lauha has been included in Puti lauha Group. Further the text also mentions about the dwandamelapana⁵ and druti⁶ processes in detail.

Rasarnava of Anonymus author

It is a book of 12th AD written as dialogue between lord Shiva and Goddess Parvati written by anonymous author. It has mentioned six varieties of lauhas and further grouped them into three viz Sara lauha the Gold and Silver, 2. Sadharana lauha the Copper and Teekshana lauha and 3.Puti lauha- the Tin and Lead⁷. It further mentions that the Teekshna lauha will be of three types namely Rohan, Vajir and chapalalya⁸ and also mentioned that it is the Kanta lauha. In another context it mentioned that the Kant aloha is of 5 types depending upon the magnetic power viz; Bhramaka, Chumbaka, Karshaka, Dravaka and Romakanta⁹.

The text also discussed about the ideal properties of Teekshna Lauha. It should be in Neela or Krishna (Blue/black) in colour, smooth/greasy to touch and with fine edge (Sukshmadhara).

A group of drugs have been mentioned under the name of Lauhamarak Gana consisting of guduchi, hamsapadi, naktamala, triphala, gopalaki (Nagabala) Gorasna (gojihwa) and tumburu. And advised to heat up to red hot, quenching in these liquids¹⁰.

Apart from this a number of liquefying methods of teekshna lauha and a number of formulations along with parada for the use of deha vada.

It is the first book to mention the flame test and indicated that the Teekshna loha will give Krishna varna (black), the Ayas will give kapila varna and the Ayaskanta will give dhumra varna flame when they reach melting point¹¹

Rasaprakasha Sudhakara of Yashodhara
Eight dhatus are being mentioned which are suvarna, rajata, tamra, asma sara (lauha), naga vanga, kamsya, riti and varta¹². Lauha is also used in the preparation of Palabhali yantra¹³, Antaralika yantra¹⁴. Apart from this it advocates the shodhan and marana processes and mentioned pharmacological properties of Lauha¹⁵.

In Rasa texts like Rasa Prakasa Sudhakara, introduced the term 'Dhatu' as an alternate name of lauha for the first time which has been followed by Sarangadhara Samhita, Bhava Prakasha and Ayurveda Prakash. These texts have also added the term upadhatu.

Sharangadhara Samhita of Sharangadhar
This is the work of Sharangadhara. Lauhasava is being described among the other asavas. Seven varieties of dhatu which are as follows, suvarna, roupya, pitala, tamra, naga, vanga, tiksanaka¹⁶. He also described about the purification of lauha in til taila, takra¹⁷ etc.

Rasachintamani of Anantadev Suri¹⁸
Lauhabhasma vidhi, Kantalauha Rasayana has been mentioned in this text. One process with the name of lauha satvapata has been mentioned and on going through the formulation which is might be the satva of haratala.

Lohasarvaswam of Sri Sureshwar¹⁹

Three types of lauha, mythological origin, identification characters, lauha shodhan, marana, lauha maraka gana, tests for bhasma, therapeutics of lauha, vehicles etc have been described.

Rasapaddati of Acharya Bindu²⁰

The classification of lauha, kanta lauha properties, general shodhan, marana of lauha, the lauhamaraka gana etc have been described in detail.

Rasasanketikalika of Chamunda²¹

The types of lauha, shodhana, marana, trividha lauha paka, test for lauha bhasma, amritikaran and the properties and uses of kantalauha bhasma have been explained.

Rasaratnakara of Siddha Nityanatha²²

Lauha is one of the ingredient of the following rasa preparations like Vajreswara rasa, Vairaba rasa, Gaganeswar rasa, Amritesha rasa, Rasa veera maha rasa. Lauha churna along with triphala, naga churna, kasisa, sindura, japapushpa, shankha churna, kustha, ela and lauha kitta are being used for colouring or dying of hair.

Rasaratnakar-Rasayan Khanda of Nityanath siddha

It has mentioned the Kantalauha Rasayana and seven methods of Lauha Rasayana. It recommended that lauha is one of the constituents in many compound formulations specially mentioned for hair²³.

Bhavprakash Nighantu of Bhavamishra

This book was written by Bhava Mishra. In Dhatvadi varga, the mythological origin of lauha is described²⁴. Lauha is otherwise known as Shastraka, Teeksna, Pinda, Kalayasa and Ayasa²⁵. The saptadosa of lauha viz. guruta, dridata, utkleda, kashmala, daha, ashmadosa, durgandha has been described here²⁶. The properties of lauha are tikta, sara, shita, madhura, guru, ruksha, lekhana, chakshusya, etc²⁷. The adverse effect of ingestion of impure lauha causes napunsakata, kustha, hridroga, shula, asmari, hrillasa and death²⁸. Apathya during lauha therapy are kusmanda, tiltaila, masa, rajika, madya and amla rasa²⁹. The laksana and gunas of sara lauha³⁰ and kantalauha³¹ are also described in Bhavprakash Nighantu.

Rasasara of Govindacharya

Lauha is included in 8 dhatus along with suvarna, rajata, tamra, naga, trapu, ritika and kamsya. Lauha kitta was used in the preparation of Musa.

Rasendra sar Sangraha of Gopal Krishna Bhatt³²

The author has enumerated asta lauha in the chapter on sutika management. Along with

general purification methods of lauha, the incineration methods and its different stages like bhanupaka etc have been mentioned. Perhaps it is the first book to advise the preparation of the lauha bhasma according to the need by using the drugs useful in respective disorders. It also advised the pharmacotherapeutics and dos and don'ts while on Lauha treatment.

Rasendra Chintamani of Dundukanath³³

It has mentioned the properties of lauha, its utility in mercurial processings, shodhana and marana of lauha along with pharmacotherapeutics have been mentioned. It also mentioned the manufacture of Shankarmatha lauha; Amritsara lauha and Nagarjunokta lauhapaka vidhi etc. have also been in detail.

Ayurveda Prakasha of Madhava³⁴

It enumerated the Lauha, its types, origin of lauha, shodhana, marana, pharmacotherapeutics, vehicles, dosha and Amritikarana procedures in detail.

Rasajalanidhi of Bhudev Mukerjee³⁵

The details of types of lauha, properties, shodhan, marana and different stages, amritikarana, tests of bhasma, dose, vehicles and druti are found mentioned in it.

RasaTarangini of Sadananda Sharma³⁶

In 20th Taranga lauha has been mentioned in which the types of lauha along with ideal characters, shodhana, marana with all three stages, lauha marak gana nirutthikaran, dose, and therapeutics have been dealt in detail.

Rasapradipika of M.Venkatacharya³⁷

Lauha has been mentioned as five types viz: shuddha lauha, bhanulauha, putilauha, mishralauha and dhatu lauha. The Shuddha lauha are gold, silver and copper. The Kantalauha and ayas come under bhanu lauha. The lead and tin are the puti lauha. Brass and bronze are the mishra lauha and the combination of any of the above five metals is the dhatu lauha. The shodhana and marana along with pharmaceutical properties have been described. Four varieties of kanta lauha along with identification characters have been described.

Rasarajlaxmi by Vishnudev³⁸

This manuscript deals with Rasa Shastra. The materials required for shodhana and marana of lauha have been explained. The sequence of the materials of general purification process is as follows- gojala, kanji, takra, taila, kulattha decoction.

Rasamrita of Yadavji Trikamji Acharya³⁹

Lauha has been mentioned in lauhavijyaniya chapter. Here he mentioned the synonyms, types, method of shodhana, marana along with method of preparation of swayam -agni lauha, Ayaskriti etc. while commenting on the types of lauha he has mentioned that in the non availability of kanta lauha he recommended the aged unused swords or blades or springs of the watches or even iron dust from the lathe cutting machines for the manufacture of the bhasma. Further special shodhan 16 pala of triphala has been recommended.

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Ayurvedic Concept Of Headache And Its Management With Nasyakarma

Dr. Mainak Banerjee

Headache is the most Common neurological symptom found in majority of population. Almost every person experiences this symptom in some form. Most of the time, headache does not get due attention that it deserves. Persons suffering from headache seldom visit a physician at early stage. Self mediation with analgesics is very much common in these situations. When such type of self medication fails to cope with the situation then only people go to a physician. It is true that headache is not commonly associated with significant neurological or other systemic diseases but sometimes serious neurological or other systemic diseases may be the underlying cause for it¹. This is why proper clinical evaluation of headache is very much important. Ayurveda, the science of life, has given proper importance to this clinical symptom and has described its various aspects along with management. The present article deals with the concept of headache in Ayurvedic classics and its management with Nasyakarma (Inhalation Therapy) which is considered to be the best modality of treatment in diseases of head².

Aetiopathogenesis of Headache

According to Ayurveda, any type of alteration in the equilibrium of the intrinsic factors namely Vata, Pitta and Kapha (Three Bio humors) when affects the structural

component of body, disease takes place involving the affected structural portion of body³. The same principle acts in the pathogenesis of headache. The vitiated dosas when affect the various structures present in the head and blood, headache takes place⁴.

According to Western Medicine headache occurs due to abnormality in several pain sensitive structures within the head or brain. The abnormalities are distension, traction, dilatation and inflammation of intracranial or extra cranial structures including intracranial veins with their Dural envelop⁵. But sometimes the pain of headache can not be explained on the basis of current neurobiological understanding of the mechanism of pain. The etiological factors of tension type headache, migraine, migranous neuralgia, coitus and exercise induced cephalgia are still obscure⁶.

Ayurveda has enumerated a list of etiological factors of headache⁷. These etiological factors can be broadly divided into two groups namely - Somatic factors and psychic factors.

The somatic factors include

- Suppression of natural urges
- Sleeping during daytime and vigil at night
- Intoxication
- Speaking aloud
- Exposure to cold wind, frost, dust, smoke,

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sun and snowfall

- Fasting
- Excessive intake of heavy sour pungent food.
- Vitiation of Ama (A product of improper metabolism)
- Injury to head.

The psychic factors are-

- Anxiety
- Grief
- Agitation
- Apprehension

Clinical Presentation of Headache

In Ayurveda headache presents in different clinical forms. It has been described as an independent disease entity or as a symptom of other systemic diseases or as an iatrogenic disease. Headache is described as a clinical feature of other systemic diseases like Vatpittaja jvara⁸, Rajyakshma⁹, Ajirna¹⁰, Vataja kasa¹¹ etc. Excessively administered Nasyakarma produces iatrogenic headache¹².

Headache as a separate disease entity as Siroroga is described by Acarya Carak¹³. On the basis of quality, location, duration, time intensity, aggravating factors and relieving factors of pain headache is of 5 types namely Vataja, Pittaja, Kaphaja, Sannipatik and Krimija Siroroga¹⁴. Sharp throbbing and irregular type of headache which aggravates at night and is relieved by application of pressure over the head etc are the clinical features of Vatik Siroroga¹⁵. In Pittaja Siroroga there is burning and aching type of pain in the head including periorbital region and nose. This type of headache is relieved at night¹⁶. Kaphaja

Siroroga is characterized by dull type of pain associated with numbness and heaviness of head¹⁷. Sannipatik Siroroga is caused by vitiation of all the three bio-humors and it is clinically characterized by pain and giddiness of head due to vitiated Vata Dosa, burning sensation and thirst due to vitiated Kaphadosa¹⁸. In Krimija Siroroga the pain is of sharp cutting type and is associated with foul smell and hemorrhagic discharge from nose¹⁹.

Acarya Carak further elaborated other four types of headache (Siroroga) in Sidhistan. They are Suryavarta, Anantavat, Ardhavabhedak and Sankhak. Suryavarta is characterized by aching type of pain in the head and orbital region and the pain increases as the day advances and when the sun goes down headache gets alleviated²⁰. Anantavat is a clinical condition associated with sharp and throbbing type of pain in the head, sterno-mastoid region, orbital region, temples and back of neck²¹. In Aradhavabhedak, the patient experiences cutting type of sharp pain in the half portion of head including sternomastoid region, forehead and temples. Such type of headache is periodic in nature and occurs at the interval of 15 days, 10 days or all of a sudden²². Sankhak is the most serious type of headache in respect to other varieties of headache described above

It is associated with sharp type of pain, inflammation and edema of brain. This clinical condition if not treated properly then the patient dies within a very short period²³.

Management of Headache-

According to Western Medicine analgesics, 5HT agonists, ergotamine preparations,

tricyclic anti-depressants etc. are used in the treatment of headache. All the above mentioned compounds have potent adverse effects and because of that these compound can not be used as long term medication²⁴. Nasyakarma or Inhalation therapy is a special method through which medicinal oil, ghee, juices or powder etc, are administered into nose. As per Ayurveda nose is the gateway of brain and medicines when applied through nose spreads into different parts of brain and cure the diseases located there²⁵. Thus according to Ayurvedic classics Nasya Karma is regarded as an important therapeutic procedure in cases of headache²⁶. As per requirement Nasya therapy can be administered on once, twice or thrice a day²⁷.

Method of Administration of Nasya

1. Before administration of Nasya the patient is advised to have light diet and evacuate his bladder and bowel²⁸.
2. Massage is performed with any suitable oils (like Dhanwantar, Kshirbala or Pancaguna oil) over the head, face, forehead, shoulder and nasal region for 10-15 minutes²⁹.
3. Hot water fomentation (Svedan) is performed with a towel soaked in boiling water for 10 minutes³⁰.
4. The patient is made to lie comfortably in supine position keeping a pillow below his neck to bring nose in front and face at a little lower position. The legs of the patient should be raised slightly³¹.
5. The liquid medicine should be warmed and put into a dropper. According to dosage schedule 4, 6 or 8 drops of medicine is

poured in right nostril keeping the left nostril closed by thumb and the patient is asked to inhale the medicine gently. The same procedure is repeated in left nostril. If the medicine is in powder form (Pradhaman Nasya) then the powder in a specific dosage is filled in a metal or glass tube attached to a rubber bulb. Medicine is blown in to the nostril of the patient through the rubber bulb.

6. After the procedure mild fomentation and massage is performed over the face, neck, shoulder, palm and sole. The patient is asked to spit out the extra amount of medicines that enters the throat³².
7. Then Dhumpana (smoking therapy) is performed followed by gargle with hot water³³.
8. Appropriately administered Nasya Therapy gives rise to lightness in the body and chest, produces symptomatic relief (i.e. Headache is relieved) and induces good sleep³⁴.
9. During the therapy the patients should avoid excessive sitting, standing, speaking and riding over vehicles, sleep during daytime, sexual intercourse, suppression of manifested natural urges, exposure to hot sun, grief, anger, intake of untimely and unwholesome food³⁵.

Different Nasya Formulations used in the treatment of Headache

1. Rasnadi taila³⁶
2. Baladya taila³⁷
3. Mayura ghrita³⁸
4. Mahamayura ghrita³⁹
5. Ghee prepared with drugs belonging to Jivaniya group of Medicine⁴⁰.
6. Medicated ghee prepared by boiling Yasti-madhu, Candan, Ananta and Milk⁴¹.

7. Powder prepared with Madan phal, Sigru, Karanja, Sunthi, Pippali and Marica⁴²
8. Sadabindu taila⁴³.
9. Madhyam and Vrihat Dasamul taila⁴⁴

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Evaluation and Effects of Eladi Gutika With Special Reference To Vrishya: A Clinical Study

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ABSTRACT: This clinical study evaluates the effect of Eladi Gutika with special reference to Vrishya. 30 patients were selected from O.P.D of NIA, Jaipur and divided into three groups and administered Eladi Gutika. The results were assessed both clinically and pathologically. The observed results suggest that Eladi Gutika can be effectively used for vrishya purpose.

Keyword: Eladi Gutika, Vrishya.

1. Introduction:

Eladi Gutika is one of the important fomulation mentioned in Ayurveda and used mainly for Kshataksheena, Raktapitta, Kasa and for Vrishya also. It consists of Ela, Tejpatra, Twak, Pippali, Sita, Madhuyashti, Kharjura, Draksha and Madhu. The present study was done to evaluate the effect of Eladi Gutika with special reference to its Vrishya property. (Ch. Chi. 11/21-24)

2. Aims and Objects

1. To evaluate the Vrishya effect of Eladi Gutika with special reference to Erectile dysfunction, Early ejaculation, Loss of libido and Oligospermia.
2. To decide the dose of Eladi Gutika for Vrishya effect.

3. Materials and Methods

30 married male individuals, between the age group 20-50 years have been registered for the present clinical trial from the O.P.D./I.P.D. Of National Institute of Ayurveda, Jaipur (Raj.).

3.1 Inclusion Criteria

- Married males in 20- 50 years.
- Male who were unable to make satisfactory sexual contact, because of Erectile dysfunction, Loss of libido, or Early ejaculation.
- Patient having Oligospermia.

3.2 Exclusion Criteria

- Disorder in sexual organ eg. Hypospadiasis.

- Unmarried males and the males below 20 years and above 50 years of age.
- Patients having psychological disorder.
- Smoking, drug addict and alcohol dependent individuals.
- Males with Primary and Secondary Azoospermia.
- Males with chronic disease like Severe Hypertension, Ischemic Heart Diseases, Chronic obstructive pulmonary disease, Diabetes mellitus.
- Drug induced erectile dysfunction
- Males having any Sexually Transmitted Disease (STD).

3.3 Administration of Drug

Prior to administration of Eladi Gutika all the healthy male individuals will be administered "Haritakyadi Churna" (consists of Haritaki, Saindhava namak, Amalaki, Guda, Vaca, Vidanga, Haridra, Pippali and Sunthi) described in (Ch. Chi.11/21-24); in the dose of 3-5 grams BD with luke warm water for 3-5 days according to condition of their Kostha for Kostha shuddhi.

3.4 Dose of Eladi Gutika

All the patients registered for the present trial was divided into 3 groups consisting 10 patients each.

Group A Eladi Gutika 12 gm. was given 3 times a day internally.

Group B Eladi Gutika 6 gm. was given 3 times a day internally.

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Group C Eladi Gutika 3 gm. was given 3 times a day internally.

Duration of trial 48 days with follow-up after every 24 days. All the healthy male individuals were recommended dietary restriction as per the description available in the Ayurvedic classics during the therapy.

3.5 Criteria for assesment of the results

Assessment was made depending on the change in subjective and objective parameters.

Subjective parameters includes feeling energetic, feeling of well being, improvement of sexual act etc. and objective parameter includes semen analysis.

Clinical assessment was made as per the symptom .Rating scale are as follows

3. 5. 1 Ejaculation

Score

No ejaculation	0
Delayed ejaculation without orgasm	1
Ejaculation without penetration	2
Ejaculation with penetration but early discharge	3
Ejaculation with own satisfaction	4
Ejaculation with own and partner's satisfaction	5

3. 5. 2 Erection of Penis

Score

No erection at all by any method	0
Erection with artificial method	1
Erection but unable to penetrate	2
Initial difficulty but able to penetrate	3
Erection but occational failure	4
Erection whenever needed	5

3. 5. 3 Sexual desire (Libido)

Score

No desire at all	0
Lack of desire	1
Desire present but no activity	2
Desire present only on demand of partner.	3
Normal desire	4
Excessive desire	5

3. 5.4 Orgasm

Score

No enjoyment	0
Lack of enjoyment	1
Enjoyment in 25% of encounters	2
Enjoyment in 50% of encounters	3
Enjoyment in 75% of encounters	4
Enjoyment in all encounters	5

3. 5. 5 Rigidity

	Score
Unable to continue sexual acts	0
Some loss but able to continue	1
Able to maintain and continue	2

3. 5 . 6 Sperm Count and quality

	Score
Sperm count below normal and sperms abnormal	0
Sperm count below normal and sperms normal	1
Sperm count normal but sperms abnormal	2
Sperm count and quality normal	3
Sperm count and quality above normal	4
Sperm count and quality very good	5

4. Semen analysis

Semen analysis of all the registered patients was done before and after the treatment. In analysis the following things were noted

1. Volume in ml.
2. Liquefaction time.
3. Viscosity.
4. pH.
5. Total sperm count in million per milliliter.
6. Motility in percent.(i.e. motile, sluggish and non motile).

5. Observations and Results

Table No1 :- Showing effect of Eladi Gutika on Erection of penis in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	1.70	4.60	-170.59%	10.47	< 0.001	H.S.
Group B	1.70	3.10	-82.35%	4.58	< 0.001	H.S.
Group C	2.40	2.90	-20.83%	3.00	< 0.025	S.

Table No. 2:- Showing effect of Eladi Gutika on Libido in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	3.20	4.10	-28.13%	2.86	< 0.025	S.
Group B	3.30	3.60	-9.09%	1.96	> 0.1	N.S.
Group C	3.40	3.50	-2.94%	1.00	> 0.1	N.S.

Table No. 3:- Showing effect of Eladi Gutika on Ejaculation in all the three groups

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	2.60	4.60	-76.92%	7.75	< 0.001	H.S.
Group B	2.10	3.50	-66.67%	6.33	< 0.001	H.S.
Group C	2.30	2.70	-17.39%	2.45	< 0.050	S.

Table No. 4:- Showing effect of Eladi Gutika on orgasm in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	2.60	4.30	-65.38%	4.02	< 0.005	H.S.
Group B	2.80	3.30	-17.86%	2.24	< 0.050	S.
Group C	2.10	2.20	-4.76%	1.00	> 0.1	N.S.

Table No. 5:- Showing effect of Eladi Gutika on rigidity of the penis in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	0.60	2.40	-300.00%	9.00	< 0.001	H.S.
Group B	0.80	1.40	-75.00%	2.71	< 0.025	S.
Group C	1.00	1.25	-25.00%	1.00	> 0.1	N.S.

Table No. 6:- Showing effect of Eladi Gutika on feeling of well being in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	0.10	1.00	-900.00%	9.00	< 0.001	H.S.
Group B	0.20	1.00	-400.00%	4.00	< 0.025	S.
Group C	0.20	1.00	-400.00%	4.00	< 0.025	S.

Table No. 7:- Showing the incidence of history of psychological problems (energetic feeling) in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	0.10	1.00	-900.00%	9.00	< 0.001	H.S.
Group B	0.33	1.00	-200.00%	3.16	< 0.050	S.
Group C	0.33	1.00	-200.00%	2.00	> 0.1	N.S.

Table No. 8:- Showing the incidence of history of psychological problems (improvement of act) in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	0.10	1.00	-900.00%	9.00	< 0.001	H.S.
Group B	0.33	1.00	-200.00%	3.16	< 0.050	S.
Group C	0.33	1.00	-200.00%	2.00	> 0.1	N.S.

Table No. 9:- Showing the pattern of volume (seminal changes) in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	1.88	2.90	-54.67%	4.31	< 0.005	H.S.
Group B	1.82	2.65	-45.73%	2.28	< 0.050	S.
Group C	2.02	2.10	-3.96%	0.60	> 0.1	N.S.

Table No. 10:- Showing the pattern of total sperm count (million/ml.) changes in all the three groups after Eladi Gutika therapy.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	72.30	89.70	-24.07%	3.59	< 0.010	S.
Group B	43.40	53.10	-22.35%	2.94	< 0.025	S.
Group C	47.15	55.70	-18.13%	1.24	> 0.1	N.S.

Table No. 11:- Showing the pattern of active motile sperms in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	57.00	68.00	-19.30%	2.43	< 0.050	S.
Group B	56.50	61.00	-7.96%	1.49	> 0.1	N.S.
Group C	56.50	58.00	-2.65%	0.90	> 0.1	N.S.

Table No. 12:- Showing the pattern of sluggish motile sperms in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	20.50	15.00	26.83%	4.71	< 0.001	H.S.
Group B	25.00	21.50	14.00%	3.28	< 0.010	S.
Group C	20.00	20.50	-2.50%	0.29	> 0.1	N.S.

Table No. 13 :- Showing the effect of Eladi gutika in non-motile sperms in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	26.50	16.00	39.62%	3.19	< 0.010	S.
Group B	19.00	13.50	28.95%	2.91	< 0.025	S.
Group C	21.00	17.50	16.67%	1.66	> 0.1	N.S.

Table No. 14:- Showing effect of Eladi Gutika on sperm count and quality in all the three groups.

Group	Mean B.T.	Mean A.T.	Mean %	t	p	Result
Group A	2.60	4.00	-53.85%	6.33	< 0.001	H.S
Group B	1.80	2.80	-55.56%	3.00	< 0.025	S.
Group C	2.11	2.00	5.26%	1.00	> 0.1	N.S.

7. Discussion

Semen analysis was performed in all the three groups for present trial. But there were no abnormalities found in viscosity, pH, and liquefaction time in any sample of semen, before and after treatment. Hence no results are obtained regarding this.

The patients were assessed on the following parameters

7.1 Subjective parameters These include Erection, Libido, Ejaculation, O r g a s m , Rigidity, Feeling of well being, Energetic feeling and Improvement of act e t c .

Erection of Penis Comparison between all the groups in erection of penis. Group A showed 170.59% increase, Group B showed 82.35% increase while Group C showed 20.83% increase in erection of penis. (Table no.1)

Libido - Comparison between all the groups in libido. Group A showed 28.13% increase While Group B and C s h o w e d 9 . 0 9 % , & 2.94% increase (Table no2).

Ejaculation Group A showed 76.92% increase, Group B showed 66.67% increase while Group C showed 17.39% increase. (Table no.3).

Orgasm - Comparison between all the groups on orgasm. Group A 65.38%, Group B 17.86% and Group C 4.76% improvement in orgasm. (Table no.4).

Rigidity - Comparison between all the groups in rigidity of penis. Group A showed 3 0 0 % improvement, Group B showed 75% improvement while Group C showed 25% improvement in rigidity of penis. (Table no.5).

Feeling of well being - Comparison between all the groups in feeling of well being. Group A showed 900% increase, Group B & C showed 400% increase in feeling of well being after the drug trial. (Table no.6).

Energetic feeling - Comparison between all the groups in energetic feeling . Group A showed 900% increase while Group B & C showed 200% increase respectively in energetic feeling. (Table no.7).

Improvement of Act - Comparison between all the groups in improvement of Act. Group A showed 900% increase, Group B & C showed 200% increase after drug trial. (Table no.8).

Semen analysis

Semen Volume Group A showed 54.67% increase, Group B showed 45.73% increase and Group C showed 3.96% increase in volume of semen after drug therapy. (Table no.9).

Total Sperm Count Statistical analysis of the data shows in Group A 24.07% improvement, In Group B the improvement percentage was 22.35% Group C showed there was 18.13% increase in Sperm count after drug trial (Table no.10).

Active Motile Sperms Group A showed 19.30% increase, Group B showed 7.96% increase and Group C was 2.65% increase in motility of sperms after Eladi Gutika therapy. (Table no.11).

Sluggish Motile Sperms The data showed that in Group A was 26.83% decrease, in Group B 14.00% decrease and Group C was 2.50% increase in motility of sluggish sperms after treatment. (Table no.12).

Non Motile Sperms The above data showed that in Group A was 39.62% decrease, in Group B 28.95% decrease and Group C was 16.67 % decrease in motility of nonsperm after treatment. (Table no.13).

Sperm count and quality Comparison between all the groups in sperm count and quality. Group A showed 53.85%, Group B 55.56% increase while Group C 5.26% decrease after the drug therapy. (Table no.14).

Conclusion

Over all results on the basis of Subjective and Objective parameters symptomatic improvement shows that in Group A was 115.81% good result, in comparison between Group B 51.03% and Group C 10.94%. From this study we may conclude-

1. Though the dose of Eladi Gutika i.e., 12 gm seem to be much higher, the better results were found in Group A in comparison to Group B and C were 6gm. & 3gm. respectively.
2. Eladi Gutika can be used for Vrishya purpose.
3. The effect may be due to ingredients of Eladi Gutika which are having Balya and Vrishya properties.

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Conceptual & Pharmaceutical Study on Sweta Bhasma of Mercury

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Iatro-Chemical knowledge is intimately associated with medicinal preparations, metallurgical operations & transmutation of metals. The extravagant ideas of 'Philosophy of mercury' had subsided into something more practical and tangible in this Iatro-chemical period and the numerous preparations of mercury came to be used cautiously and tentatively. According to the alchemists, there are four kind of bhasmas of mercury namely black, red, yellow & white.¹ The white variety is Rasa Karpura or mercuric chloride.² The sweta bhasma of mercury are found to be medicinally used from the 12th century downwards and various recipes are given for its preparation.

Recently the report of JAMA has mentioned presence of heavy metals in herbo-mineral preparations which produce toxic effects in human being. But our alchemists claim that mercurial preparations which are produced by adhering to the classical procedures, will not have any toxic effects when used in prescribed dose. Rasa Karpura which is also known as corrosive sublimate remains to be the most feared toxic substance in the perspective of modern medicine. But our classical texts mentioned it as very effective, used in a smaller dose and has prolonged shelf life. So in order to make global acceptance its S.O.P. & determination is very much essential.

AIMS & OBJECTIVES:-

1. Conceptual study of Sweta bhasma.
2. To prepare Sweta bhasma according to classical method.
3. Determination of Sweta bhasma chemically.
4. Therapeutic uses of Sweta bhasma.
5. Purification of Sweta bhasma.

History of Sweta Bhasma: Rasa Karpura at first was described by alchemist **Yasodhara Bhatta** as sweta bhasma. It is prepared by mercury, gairika, khatika, saidhaiva, kasisa & sphatika in damru yantra. 36 hours are required for its preparation.³ In **Rasa Paddhati**, two types of preparation are described. In first method aforesaid ingredients are pounded with datura, Kakmachi & kantakari svarasa and 1 day is required⁴. In 2nd method seven days are required for its preparation⁵.

Acharya **Salinath** mentioned three methods of its preparation.⁶ Acharya **Dunduka nath** also described two methods of its preparation⁷. Two types of preparations also are described in **Rasendra sara sangraha**⁸. **Chudamani Mishra** described nine methods of its preparation.⁹ Acharya **Madhava** described two methods.¹⁰

Acharya **Sadananda Sharma** prepared it according to chemistry basis. Here it is prepared by heating of mercuric sulphate with an equal quantity of Sodium Chloride in Valuka Yantra. Mercuric sulphate needed is obtained by evaporating a solution of mercury in hot concentrated sulphuric acid (1:1.5)¹¹. Acharya **Hari Prapanna Sharma** has compiled 28 methods of preparation from the previous texts.¹² But the 18th number of preparation is the unique and contribution of the author¹³. Acharya **Vasudev mulashankar Dwivedi** mentioned two methods, i.e. - one from Rasatarangini & another from "Natun Kalpa" of **Rasa Yoga Sagara**.¹⁴

Sir P.C. Roy also compiled the previous texts but he also mentioned the Chinese & Japanese methods which are similar as our classics.¹⁵

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In schedule E (Drug & Cosmetic act-1940) mentioned that Rasa Karpura is a poisonous mineral.

Preparation of Sweta Bhasma :¹⁶

Two kinds of Mercurial Chlorides are available in the market now-a days. One is **Rasa Karpura** or Mercuric Chloride (HgCl_2) and another one is **Rasa Pushpa** or Mercurous Chloride (Hg_2Cl_2) or Calomel. Both are white crystalline in nature but the main difference is, Rasa Karura is water soluble but Rasa pushpa is insoluble in water.¹⁷

Both the chlorides were prepared in the deptt. of Rasa Shastra Laboratory. N.I.A., Jaipur according to the following steps

- 1.Preparation of Mercuric Sulphate.
- 2.Trituration of Mercury & Sodium Chloride with Mercuric Sulphate.
- 3.Sublimation of the final product.
- 4.Separation of Rasa Karpura & Rasa Pushpa.

At first 1 part of mercury is gently heated with 1.5 parts of concentrated Sulphuric acid until the moisture is evaporated.



This white coloured Mercuric Sulphate triturated with same quantity of Mercury & NaCl and introduced in a long neck glass bottle which was covered with mud & cloth for 7 times and heated it for 9 hrs. in valuka yantra. After 5 hours of continuous heating total moisture was evaporated and cork applied. After 9 hours of subjecting heat keep it for self cooling. Next day bottle was broken and both the materials were collected from the neck of the bottle.



Rasa Rasa
Pushpa Karpura

Separation of Rasa Karpura & Rasa Pushpa :-

The prepared sample was diluted with water and filtrated by whatman's no.1 filter paper. The water soluble parts are Rasa Karpura & insoluble parts that remained in the filter paper are Rasa pushpa.

Physical Analysis

Parameters	Rasa Karpura	Rasa Pushpa
Colour	White	White
Appearance	Crystalline	Crystalline
Odour	N.A.	N.A.
Taste	Metallic & Nauseous	Taste less
Touch	Corrosive	-

Qualitative analysis :-

Parameters	Rasa Karpura (HgCl_2)	Rasa Pushpa (Hg_2Cl_2)
1.By Adding Dilute HCl	No precipitate	White ppt of Hg_2Cl_2
2.By adding Stannous Chloride	White ppt of Hg_2Cl_2	White ppt of Hg_2Cl_2 Chloride changing grey-black
3.By adding Potassium Iodide	Scarlet ppt of HgI_2	Yellowish-Green ppt of Hg_2I_2
4.By adding Sodium hydroxide	Yellow ppt.	Black ppt of Hg_2O
5.By adding Ammonium hydroxide	White ppt.	Black ppt.

Therapeutic uses :-

- Sarva Roga Nashaka¹⁸
- Vaji karaka¹⁹
- Rasayana²⁰
- Kustha Roga Nashaka.²¹
- Phiranga²²
- Upadansha²³
- Visha Dosha Nashaka²⁴
- Mandagni²⁵
- Svasa & Kasa hara²⁶

Dogase :

* **Phiranga roga** -1 ½ - 3 Ratti²⁷

¼ th Ratti²⁸

* **Upadansha roga** -1-3 Ratti²⁹

½ - 1 Ratti³⁰

* **Visha dosha**-6 Ratti³¹

3 Ratti³²

* **Rasayana**-6 Ratti³³

* **Vaji karana**-1 Ratti³⁴

* **Agnidipana**-1 Ratti³⁵

* **Prameha, Kustha, Mutraghata & Grahani**-6 Ratti³⁶

* **Virechana** -2 ½ Ratti³⁷

* **Hikka Roga** -1/8 th Ratti³⁸

Adult dose-1/32 1/16th grain³⁹

Mode of Administration :

- In Visa Dosha Rasa Karpura should be administered in the morning covered with Lavanga paste or enclosed in a ball of Godhuma paste.⁴⁰
- In Phiranga Roga it should be used covered by Jaggery.⁴¹ or paste of Lavanga, Chandana, Kasturi & Kesara⁴²
- For Rasayana effect it should be used with Karpura⁴³.
- In Bali, Palita, Prameha, Kustha, grahani shula & mutraghata it should be used with

Sita, ghreeta & Honey⁴⁴.

- In Jvara Maricha & Guda, in Aruchi pippali, in Atisara Bilva Churna, in Pandu roga triphala, in Kasa & svasa roga Bhargi Kvatha should be administered with Rasa Karpura⁴⁵.
- For Virechana effect Rasa Karpura should be used with Sajji Kshara, Milk & Water⁴⁶.

Purification:-

- Rasa Karpura is purified after subjecting heat with ghreeta in an iron pot⁴⁷.
- It is also purified by frying with lavanga powder & ghreeta for 108 times⁴⁸.
- Another method of purification is done in Dola yantra with water⁴⁹ & ghreeta for 12 hrs⁵⁰.
- In the context of Bhandya Rasa it is mentioned that Rasa Karpura is purified by heating after covering it with ½ part of lime⁵¹.

Do's & Don'ts of Rasa Karpura :-

Do's :-Cold water⁵²

Milk, Rice, Tambula⁵³

Madhura dravya⁵⁴.

Don'ts⁵⁵ 1). Amla, Lavana, Saka, Taila.

2)Sunlight, excessive exertion, sexual activities.

Complications of impure Rasa Karpura administration⁵⁶

Mukha paka & burning sensation of the body.

Fatal dose of Rasa Karpura -3-5 grain⁵⁷

Fatal period of Rasa Karpura-3-5 days⁵⁸

Treatment of the complication of Rasa Karpura :

- In case of Mukhapaka Gandhaka ghreeta with milk should be administered⁵⁹.
- Tuthya, Kathya & elaichi churna should be applied locally in case of Mukhapaka⁶⁰.
- Kusmanda Svarasa, Kumari Svarasa & Nimba taila should be administered in case of burning sensation of the body. Nimba taila also applied locally in burning sensation of the body⁶¹.

Antidote of Rasa Karpura :⁶²

Milk, Egg & BAL

Conclusion :-

Above study shows that there is need to develop Standard Operating Procedure as well as analysis to detect the final product. The study suggest that Rasa Karpura & Rasa Pushpa can be prepared by classical method with the help of modern techniques. Nine hours is standard duration. The heating & fuel providing pattern and qualitative analysis may be taken as standard. Further study can be carried out using the quantitative, experimental & clinical parameters.

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**Preparation of Sweta Bhasma
of Mercury**



Sublimation of Rasa Pushpa



Rasa Pushpa



Rasa Karpura & Rasa Pushpa



Rasa Karpura



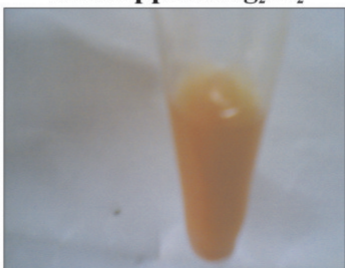
**(By Adding Dilute HCL)
White ppt of Hg_2Cl_2**



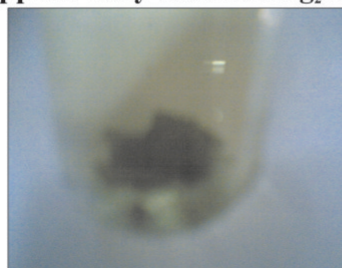
**(By Adding Stannous Chloride)
White ppt of Hg_2Cl_2**



**(By Adding Stannous Chloride)
ppt of Grey-Black of Hg_2Cl_2**



**(By Adding Potassium Iodide)
Scarlet ppt of HgI**



**(By Adding Potassium Iodide)
Yellowish-Green ppt of Hg_2I_2**

The liver is an important organ for metabolizing and detoxifying drugs. The association between chemical and liver injury has been recognized since antiquity. There are a huge number of drugs and other chemicals that can produce hepatic injury. Drugs and their metabolites can damage the liver. All of the anti-TB drugs with exception of Streptomycin can cause or have been associated with an elevation in the liver enzymes (S. Bilirubin, AST, ALT, S. Alkaline phosphatase etc.), indicating liver toxicity.

Ancient sages like Charaka, Sushruta and Vagbhatta had vividly described toxicity of drugs (Vishakatata Lakshan) and Agads (Detoxifying agents) to reduce the toxic effects of poisonous substances in body in Agadtantra (Ayurvedic Toxicology). Vishakatata Lakshans have been cured by use of appropriate Antidote or Agada. Sushruta has explained 10 Sthaver Visha. (Consumable poisons) namely Mool, Patra.....Dhatu and Kanda (Su. Kalp. 2/4). It is believed that if poisons are not purified and used in an injudicious dose, they may cause toxicity in body. Arsenic, Aconite, Oleander etc. are few examples of such poisons which in a specific dose after purification can be used as drugs. Such description lays the foundation of identifying similar herbal, mineral, chemical drug or food preparations which have the potential of causing biotoxicity after use in human body. Further the clinical symptoms associated with poisoning with such drugs like "Peetvinmutrata Netrata" i.e. yellowness of eyes, stools and urine, "Prasake" and "Chhardi" i.e. excessive salivation and emesis point towards gastrointestinal and hepatotoxic potential of some drugs. Most of the toxic effects of the consumed substances are as a result of their Ruksha, Ushna , Teekshana, Sukshama Guna etc. Which provokes Pitta (Pitta Prakopa) (Su, Kalpa 2/5-17).

Sushruta has given hypothesis of Kritrim Visha (Manufactured or Artificial poisonous substances) which when used for a longer duration on a low dose (non morbid) schedule has a cumulative tendency in body and therapy producing toxic symptoms after some duration of regular consumption. This phenomenon is commonly known as Dushi Visha (Su. Kalp 2/24-26).

The persons affected by such Dushi Visha will have features of Diarrhoea (Atisara), loss of taste (Virasata), Vomiting (Vaman), Syncope (Mursha), loss of body hairs etc. Such states with continued administration of low dose toxins (Dushi Visha) also develop multiple Dhatu Agni Vikara. The use of Anti Tuberculosis treatment consisting of Rifampicin, Isoniazid, Pyrazinamide and, Ethambutol etc. which all have a Pitta Prakopa potential by virtue of their Ushna, Teekshna, Vidahi Guna have a definite potential of acting like a Dushi Visha hence their use for a longer duration is very likely to produce toxic symptoms. Consumed orally as they commonly are, the Gastrointestinal and Hepatotoxicity are the earliest symptoms. It is a different matter that the importance of ATT does not allow us to stop the use of this Dushi Visha for the betterment of the patient hence there is always need for simultaneous use of some drugs and measures to reduce the toxicity of these Vishas (Poison). Selecting the right drugs in right dose combination in a specific disease stage of tuberculosis keeping in view the age, body wt, sex etc. of patient is one step but simultaneous use of toxicity reducing formulation on other hand is another measure for successful continuation of ATT over a desired period in patients. Antitubercular drugs by virtue of their Ushna, Tikshana, Vidahi (Pitta Prakopaka) properties first vitiates Rakta dhatu, and then it moola Yakrita is targeted by the drugs and vitiates the same. As we all know,

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Yakrita is the main venues of all Pakas & seat of Pitta/Agni which is now considered as Gastric juices, complexes of enzymes & hormones. These Gastric juices, enzymes & hormones help in the digestion and absorption of fat by emulsification. If the organ Yakrita is vitiated by the Paittik properties (Ushna, Tikshna, Vidahai etc.) of ATT, then bile secretion i.e. Pitta/Agni which was secreted by the Yakrita decreases leading to Agnimandya, Arochaka etc. Due to this the patient consumes little amount of food which will be devoid of nutritive value and ultimately lead to malnutrition to Yakrita Vikara or Yakritodara. So, Bilirubin is not metabolized properly and increased in the Shakha as well as Kostha, colouring the skin, mucous membrane, conjunctiva, urine and stool. This is the stage of Vyaktavastha. This stage is well co-related with that of drug induced Hepatitis. At this stage if the disease is not treated properly or the consumption of ATT is still continued, then it leads to further vitiation of the organ Yakrita and Agnimandya becomes more severe. Due to Agnimandya there will be vitiation of Udakamsha present in the Rasa and Rakta Dhatu and causes Udakavaha and Swedavaha Srota Avarodha which causes Vimargagamana of the Udakamsha. Ultimately this Udaka collects in the Oudaryakala (Peritoneum) causing Jalodara. This concept is supported by classical references that if the Udara Rogas are not treated properly (especially Yakritodara) they are supposed to develop consequence of Jalodara. This stage is well correlated with that of Ascites due to drug induced Hepatitis. The process of Hepatitis may undergo resolution and the disease may be subsided in spite of continuation of ATT. However, the process may prolong and the disease may produce complications as a sequel. This may be considered as the stage of Bhedavastha. The usual progression is the conversion of the

Koshthashrita Kamala to the stage of Shakhashrita Kamala as has been described by Charaka and Vagbhatta as Ruddh Patha Kamala. In this stage, Kapha and Vata obstruct the pathway of Pitta (Biliary channels), so no bile is excreted in GIT making the stool clay or white coloured. Further the disease advances to the stage of Kumbh Kamala characterized by edema, ascites with bleeding tendencies. It is the state of Hepatic failure. Lastly, the patient may land in the stage of hepato-renal failure which is very similar to the symptoms of Panaki. It is also stage of Bhedavastha. In this stage the disease becomes almost Asadhya (incurable). Further if the Kamala subsides but some residual changes persist, it may be seen as Nidanarthakara Roga and later on ascites may develop. Thus the disease may be cause of Udara Roga in the later stage. Pitta Virechaka herbal drugs have always been used as Agads (Detoxifying agents) in Ayurvedic toxicology. For example herbal drugs like Amrita (*Tinospora cordifolia*) Daruharidra (*Berberis aristata*), Sariva (*Hemidesmus indicus*) etc. have been used to reduce the toxic effects of some poisonous substances in body. (Su. Kal. 2/44-46). The detoxifying (hepato-protective) activity of these Agad has been attributed to their anti-cholestatic action, reduction in free radicals and reduction in cell protein necrosis as well as immune suppression and glutiothione depletion reduction potential. Present article also works on similar hypothesis where the use of ATT is understood as Dushi Visha, Hepatotoxicity as the first stage of damage by it and use of Pitta virechaka drugs i.e. (i) Daruharidra, ii) Ghritakumari, iii) Kakamachi iv) Bhumyamalaki as the Agads to keep the body free from toxic effects of these drugs.

Aetiopathological And Therapeutic Study On Kaphaja Yonivyapad W.S.R. To Infective Vaginitis

** VD Neelam Gupta ** Dr. Shipra Agarwal *** Vd Pawan K. Godatwar*

INTRODUCTION:- Women's health is of prime importance to get a healthy society. In Ayurveda, diseases of women have been given due importance. A specific group of the disease of women i.e. Yonivyapad has been mentioned in our ayurvedic classics which exclusively occur in females & disrupt the women hood in various ways. They are as under-

1. Vatala yoni
2. Pittala yoni
3. Kaphaja yoni
4. Tridoshaja yoni
5. Asraja yoni
6. Arajaska yoni
7. Acharna yoni
8. Aticharna yoni
9. Prakcharna yoni
10. Upapluta yoni
11. Paripluta yoni
12. Udavartini yoni
13. Karnini yoni
14. Putraghni yoni
15. Antarmukhi yoni
16. Suchimukhi yoni
17. Sushka yoni
18. Vamini yoni
19. Shanchita Yoni
20. Maha yoni.

AIMS AND OBJECTIVES

1. To study infective vaginitis in Ayurvedic perspective.
2. To develop an ayurvedic aetiopathogenesis of infective vaginitis in terms of Kaphaja yonivyapad,

3. To. Study the therapeutic effects of 'Dhatakyadi taila' (as pichu) and 'Dhatakyadi Kwath' (as vaginal douche) in the treatment of Kaphaja yoni vyapad (Infective vaginitis).
4. To study the antimicrobial sensitivity of the drug.

MATERIALS AND METHODS

- . Conceptual study
- . Clinical study

Title:- Aetiopathological & Therapeutic study of Kaphaja yoni vyapad W.S.R. to conceptual study:- Kaphaja yonivyapad is one of the 20 yonivyapad explained in ayurvedic classics & this can be compared with infective vaginitis.

The Etiopathogenesis of the disease is, Kaphadosha is vitiated due to excessive use of abhiishyandhi (articles producing oozing or serous effusion) substances, reaching reproductive system & causing unctuousness, coldness, itching & dull pain in the vagina.

The main characteristic features of this condition are presence of itching in vagina & unctuous discharges, which are found in trichomonas or monilial vulvovaginitis, Charaka has mentioned dull pain while vagbhata a painless state. In severe trichomonas infections, there may be mild pain due to inflammation, however, in majority of cases it is a painless disease. In chronic trichomoniasis there may be menstrual irregularity which has been referred by Charaka. In this infection vaginal canal is sometimes covered with strawberry colored patches as well as white or yellow thick curdy discharge these features

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may give yellowish appearance to the vaginal canal.

कफोडभिश्यन्दिर्भिवृद्धो योनिं चेद दशयेत्स्त्रियाः।

स कुर्यात् पिच्छिलां भीतां कण्डुग्रस्तअलववेदनाम् ।

पाण्डुवर्णा तथा पाण्डुपिच्छिलार्तववाहिनीम्॥

(च.सं.चि.30/13-14)

इलेश्मला पिच्छिला योनिः कण्डुयुक्ताडनिञ्जीतला

(सु.सं.उ. 38/27)

Clinical Study:- Patients for the present study were selected from OPD/IPD of Arogya shala, Madhav Vilas Hospital, NIA, JAIPUR. Complete history recorded on proforma based on Ayurvedic & modern parameters, designed according to W.H.O. Pattern.

Inclusion Criteria:-

1. Patients with signs & Symptoms of kaphaja yoni vyapad w.s.r. to Infective vaginitis.
2. Age bet 20-40 years (Child bearing age)
3. Married
4. Diagnosis relevant lab investigations.

Exclusive Criteria :-

1. Pregnancy
2. Diabetes mellitus
3. Chronic disease
4. Menopausal Women
5. Un married Women
6. Other STD.

Assessment Criteria :- Patients were assessed before & after treatment according to the signs & symptoms, finding of wet smear which includes clue cells, puscells, presence of hyphae & Trichomonas, Pts., Other laboratory investigations ie Hb% TLC, DLC. ESR, VDRL, RBS, Urine routine & microscopic & Sugar was assessed before & after the completion of treatment & changes were noted.

Method of administration :-

Group A :- 16 Patients were treated with Ayurvedic drugs I.e Dhatkyadi Kwatha & Dhatakyadi taila. Treatment was started from 6th day of menstrual cycle. About 1.5 liters of Dhatakyadi Kashaya was prepared & vaginal douche was given for 10-15 minutes, after this

10 ml. vaginal tampon (Consisting of Dhatakyadi tail) was placed undisturbed for 12 hours. This Rx has been followed for 15 consecutive days.

Group B:- In control study 15 pts. Were selected, they were treated with clotrimazole vaginal tablet for first six days along with Betadine vaginal tablets for 14 consecutive days.

Observations & Discussion :- Discussion regarding one mechanism of action of drug. Dhatakyadi Kwath & taila contains, Dhataki flowers, Rasna, Utpala-seed, Amra seed, Kathphala, Udumbara fruits, Amalaki leaves Madhuka roots, Jambu seed, Dadima, Kasisa, Saurashtrika, Ajadhugdha, Aiamutra, Tilataila.

Above mentioned drugs are having kasaya rasa (Astringent) & Katu Vipaka, Laghuguna, Ruksha & Snigdha guna. So, these drugs mainly acting as a kaphashamaka & Vatashamaka. The Probable action of these drugs on kaphaja yonivyapad can be interpreted like this.

1. Shodhana Karma Purifying effects.
2. Stambhan karma
3. Yonisankochana Karma.
4. Shodhan karma i.e. purifying effects.
5. Stambhan karma i.e. astringent effects
6. Yonisankochana karma i.e. Constriction effects
7. Krimighana i.e. antimicrobial effects
8. Sothahara karma i.e. Anti-inflammatory effects
9. Kandughana karma i.e. anti-pruritic effects
10. Shulaprashmana i.e. analgesic effects
11. Vranaropana karma i.e. healing effects.
12. Tridosahara especially vata kapha samak
13. Acidifying effect i.e. the drug will help in restoring normal condition of vagina (pH of normal vaginal fluid is 3)

The Hypothesis behind this selection is that the douche with dhatakyadi kwath will be able to wash away the pre existing discharges which are contaminated or infected with the organism growing in it and then the application of dhatakyadi taila in pichu form will have maximum effect on the walls of vagina resulting in its astringent, antiseptic, antimicrobial effect and the pH which was raised could be brought to normal i.e. acidic pH(4.5)

❖ Discussion regarding observations-

It was found maximum no. of patients were

Observations	Percentage of cases	Probably due to
1.Age group of 20-35yrs	82.86	More sexual activity, child birth, abortions in reproductive age group.
2.Illiterate	47.82	Earlier marriages & belonged to rural areas.
3.Lower class	58.26	Poor nutritional state(Vitamin deficiency), repeated abortion & child births, ignorance, poor hygienic conditions. More frequency of intercourse.
4.Housewives	78.26	Their carelessness regarding own health
5.Married women	91.30	Coital history as causation of disease
6.Multipara	63.04	Greater years of exposure to causes, low resistance due to repeated strain of pregnancy.
7.Normal mens. Cycle	67.39	No conclusion could be drawn from this data.
8.Normal sleep pattern	54.34	-do-
9.Madhya kosta	39.13	-do-
10.Tea addiction	50	-do-
11.Kapha pradhan pitta prakriti	71.73	-do-
12.Madhyam satva	82.60	-do-
13.Madhyam samhanan	78.26	-do-
14.Aahara shakti	78.26	-do-
15.Madhyam sara	95.64	-do-
16.Vegetarian	63.04	-do-
17.Jangala desha	97.83	Study was conducted in Jaipur.
18.Recurrent vaginal infection	80.43	Most patients observed with in 10-15 days of married life due to frequency of excessive coitus.
19.Cervical erosion	52.17	Causative of excessive vaginal discharge
20.Abortion history	52.16	Plays an important role in causation of infection.

21.Aharaj nidan		
-Lavan	80.40	Etiologies for Nija Sotha.
-Kshara	69.56	
-Teekshana but sweet	54.34	
-Guru abhishyandi	63.04	
-Abhojana/dustabhojan	54	
22.Viharaj nidan		
-Deha-ashuddhi	54.47	-do-
-Ativyavaya	58.69	
-Mithyaupachara after deliveries or abortions	23.91	
-Vishamprasuti	10.86	
23.Mathuna Asahishnuta	54.34	Dushti of Artava vaha srotas, site of khavagunya i.e. Kshubdha Yoni
24.Artava dosha	32.60	-do-
25.Pandu	34.78	Lower immunity predisposing cause for infections.
26.Krishta	58.69	-do-
27.Obesity	41.30	Excessive sweating responsible for dampness in external genitalia as causative of infection.
28.UTI	32.60	Closeness of vagina & urethral orifice.
29.Cardinal Symptoms		
Vaginal discharge	-100	-Srava as K-predominacy
Yonidaurgandhya	-65.21	-Bacterial infection
Yonisheetalta	-56.52	-K dosha involvement
Yonikandu	-36.95	-Vulvo-vaginal Candidiasis
Yonidaha	-41.30	-Itching & Inflammation of ext. Genitals
Yonisotha	-19.56	-Vulvo-vaginal Candidiasis
30.Associated symptoms		
-Mild pain in lower Abd	-73.91	-Pelvic congestion
-Backache	-71.73	-irritation of nerves by chronic inflammation.
-Burning micturition	-58.69	-UTI
-Cervical erosion	-52.17	-Alkaline environment favourable for organism to grow as excessive discharges from Cx which is alkaline in nature.
-General weakness	-67.37	-Fatigue, anemia, perpurium
-Bacterial infection	-80.43	-Mostly due to Vaginosis then Candidiasis and Techomoniasis.

RESULTS-(After Treatment)

Symptoms	Relieved %in GroupA(Ayu)	Relieved %in GroupB(mod.)
1.Cardinal Symptoms		
-Yonipaicchilya	-73.68	-73.33
-Yonidaurgandhya	-80.00	-70.00
- Yonisheetalta	-75.00	-71.43
- Yonikandu	-53.00	-71.43
-Yonidaha	-75.00	-71.43
- Yonisotha	-83.33	-80.00
2. Associated symptoms		
-Mild pain in lower Abd	-76.92	-75.00
-Backache	-65.00	-37.50
-Burning micturition	39.29	-52.38
-Cervical erosion	83.33	-18.18
-General weakness	33.33	-33.33

Over all relief in symptoms of Group A(Ayu.) was 65.10% and Group B (Modern) was 56.71%. However changes in Hematological tests were insignificant in both groups probably due to no internal medications.

CONCLUSION

- ❖The disease Shleshmaja yonivyapada (Ayu.) comparable to infective vaginitis(Modern)
- Dosha-Kapha predominant Vata :
- Nidana basically kaphaja Ahara-vihar & deha -ashuddhi (Krimi) as well as Nija sotha's Nidans.
- Prakriti-females with kapha pradhan pittaja or kapha pradhana vatika prakriti are predominant.
- Its Cardinal symptoms are-excessive vaginal discharge, pruritis vulvo-vaginal region, foul smell, Yoni sheetala or daha..
- Associated symptoms are-backache, pain in lower abdomen, yoni sotha, cervical erosion etc.
- Sthanika chikitsa is only application treatment.
- ❖Culture is not the main tool for diagnosis, as

infection causing organisms are normal inhabitants of vagina.

- ❖In-vitro anti-microbial sensitivity study however did not show zone of inhibition against the pathogenic bacteria but it may be hypothesized that they may be bacteriostatic instead of being bactericidal.

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Constipation: A Life - style Disorder

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Constipation is a common complaint, now a days. Because of the wide range of normal bowel habits, constipation is difficult to define precisely. Most of the persons have at least three bowel movements per week, and constipation has been defined as a frequency of defecation of less than three times per week.

The clinical picture may differ and it is not only based on frequency of defecation. Other associated symptoms may also be present, e.g. complaints of excessive straining, hard stools, lower abdominal fullness and a sense of incomplete evacuation.

In modern medical science several causes of constipation are described, in which use of certain drugs, dietary habits and changing life-style patterns are also included.

In Ayurveda, responsible factor for defecation is vaayu, especially apana vaayu. Incomplete bowel evacuation and constipation are produced by aggravated and vitiated vaayu. This condition is not described separately but mentioned as a symptom in various vataj roga, e.g. aggravated vaayu in koshtha, aggravated vaayu in guda, aggravated vaayu in pakvashaya, mala-avrita vaayu, suppression of purish-vega, etc. Beside this, another condition can also be responsible for incomplete bowel evacuation/constipation i.e. purisha kshaya. In kshaya condition finally vaayu is aggravated and worsen the morbidity. Therefore, it can be

said that aggravated and vitiated vaayu is the only cause for incomplete bowel evacuation and constipation.

Here emphasis is given on changing life-style pattern which aggravates vaayu and produces constipation. Following conditions can be considered in this context which are part of our modern life-style-

- Regular use of excessive cold food i.e. refrigerated palatable and potable articles, etc.
- Regular use of ruksha food articles i.e. bread without butter, legumes/beans without ghee and spices, dried food, old packed food, etc.
- Regular and excessive use of food having katu, tikta and kashaya rasa.
- Increased use of virudha ahar, e.g. milk and its products with sour fruits and sour food articles, etc.
- Untimely food (kala-visham) in context to day as well as season.
- Increased use of non fibrous food articles, e.g. fast food, junk food, etc.
- Heavy and oily dinner.
- Late-night dinner.
- Having tea/coffee after dinner.
- Excessive amount of tea/coffee in daily routine.
- Habits of smoking, tobacco chewing and alcohol drinks.
- Avoidance of milk, ghee, fruits and salad in daily diet.

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- Suppression of urges especially Defecation.
- Intolerance to mental urges i.e. grief, fear, anger, anxiety, depression, etc.
- Unplanned dieting or dieting without expert consultation.
- Intake of certain drugs without consultation, e.g. antidepressants, antipsychotics, codeine and other narcotic analgesics, aluminium or calcium containing antacids, iron supplements, etc.
- Frequent use of laxatives.
- Daily routine with constant rush.
- Excessive work load.
- Excessive travelling.
- Disturbed and deranged sleep cycle.
- Lack of exercise or sedentary life-style.
- Intake of food without devotion or mental involvement means just packing of stomach with food.
- Intake of food without ahar-vidhi-vidhan.

- Dirutarhingwadi churna
- Hingu-ugragranthadi yoga
- Lasunadi vati
- Lavanbhaskar churna
- Triphala churna
- Haritaki churna
- Narach churna
- Erand tail
- Icchabhedi ras
- Guda varti
- Niruha vasti

Following asanas can also be useful in the management of the condition but must be performed under the guidance of expert-

- Trikonasana and its series
- Parshwottanasana and its series
- Pshchimottanasana
- Uttanasana
- Veeerbhadrasana
- Ardhachandrasana

After review on above points it can be said we are going away from our prescribed life-style which is necessary for the maintenance of dhatu-samya. That is the reason, community is suffering from various life-style disorders and constipation is one of them. We can escape from this problem by correction of above mentioned life-style variations, because Ayurveda gives emphasis first on prevention and next on treatment. If disease is already manifested and not controlled by life-style changes, given medicines can be used with physician consultation as well as on the basis of underlying cause, degree of dosha-dushya involvement, chronic condition, severity, etc.-

अम्लपित्तस्य संहितोक्तं स्वरूपम्

डा. असित कुमार पांजा

अम्लपित्तम् आयुर्वेदीय-चिकित्सा-पद्धत्याम् एवं भारतीय-समाजे एकः महत्त्वपूर्णः व्याधिः अस्ति . संहिता-कालतः एवं अस्य स्वरूपम् एवं लक्षणं चिकित्सक-वर्गस्य सम्मुखे स्पष्टम् एवं सुसंज्ञितम् आसीत् . यद्यपि चरक-संहितायां, सुश्रुत-संहितायाम् एवम् अष्टाङ्ग-संग्रहे अम्लपित्तस्य स्वतन्त्र-व्याधि-रूपेण वर्णनं न मिलति परन्तु विभिन्न-स्थानेषु अन्येषां रोगाणां लक्षणस्य रूपे अथवा अन्यस्मिन् द्वितीयस्मिन् स्वरूपे अम्लपित्तस्य उल्लेखः अस्ति. पुराकाले काश्यप-संहितायाम् एवं रोगविनिश्चये अम्लपित्तस्य स्वतन्त्र-रूपेण विस्तृतं विवरणं मिलति . वाचस्पत्ये अस्य व्याधेः निरुक्तिः एतेन प्रकारेण कृता अस्ति-“अम्लाय पित्तम् . रोगो भेदः यत्र भुक्तं सर्वं वस्तुमात्रं पित्तदोषेणाम्लरसतां नीयते तस्मिन्” . अर्थात् यस्मिन् रोगे पित्त-दोषः भुक्तं समस्तं वस्तु अम्लं करोति, तम् अम्लपित्तं कथयन्ति. चरक-संहितायाः सूत्रस्थानस्य प्रथमाध्याये दुग्धस्य सामान्ये प्रयोगक्रमे अम्लपित्त-रोगस्य उल्लेखः कृतः अस्ति. चिकित्सा-स्थानस्य ग्रहणी-रोगाध्याये अम्लपित्तम् अजीर्ण-रोगस्य लक्षणस्य रूपे प्रस्तुतं कृतम् अस्ति. ढास्मिन् चक्रपाणिः टीकां कुर्वन् कथितवान् अस्ति-‘अम्लगुणोद्विक्तं पित्तम्. यद् अन्नविषेण सह संयुक्तं भूत्वा दुष्टम् अजीर्णम् अवस्थां कथितवान् अस्ति-‘अम्लगुणोद्विक्तं पित्तम्. यद् अन्नविषेण सह संयुक्तं भूत्वा दुष्टम् अजीर्णम् अवस्थां प्राप्नोति एवं अस्याम् अवस्थायाम् अजीर्णं, क्लमः, अरोचकः, तिकांम्लोद्गारः आदीनि लक्षणानि भवन्ति. तानि सर्वाणि माधव-निदानोक्तस्य अम्लपित्तस्य लक्षणैः सह मिलन्ति. टीकाकारः गङ्गाधर-रायः अस्य अन्य-तन्त्रस्य शुक्रेण सह तुलनां कृतवान् . शब्दकल्पद्रुमः शुक्रेण निरुक्तिम् अनेन प्रकारेण कृतवान् अस्ति - “यानि स्वभावतो मधुरादि-रसानि कालवशेन उदकवासादिना चाम्लवन्ति तानि शुक्तानि”

अर्थात् यस्मिन् रोगे मधुरादीनि रसयुक्तानि द्रव्याणि निरुक्तिम् अनेन प्रकारेण कृतवान् अस्ति - “यानि स्वभावतो मधुरादि-रसानि कालवशेन उदकवासादिना चाम्लवन्ति तानि शुक्तानि” अर्थात् यस्मिन् रोगे मधुरादीनि रसयुक्तानि द्रव्याणि कालवशात् अम्लरसे परिवर्तन्ते तत् शुक्तम् कथ्यते. अम्लपित्तम् मुक्त्वा अम्लक-शब्दस्य प्रयोगः अपि बह्वर्थां स्थाने-स्थाने भूतवान् अस्ति यथा महर्षि-चरकः अम्लकं चत्वारिंशत्प्रकाराणां नानात्मज-पित्तज-विकाराणाम् अन्तर्गतं मतवान् अस्ति, एवं ग्रहण्याः पूर्वरूपे अपि स्वीकृतवान् . एतासु सर्वासु अवस्थासु निदानानि पित्तश्लेष्मात्मकानि भवन्ति, यानि अम्लपित्तेन सह सामान्यानि भवन्ति एवं लक्षणसाम्यता अपि प्रायेण एक सदृशी अस्ति . झरकसूत्रस्थानस्य प्रथमाध्यायान्तर्गत-दुग्ध-प्रकरणे एवं चिकित्सास्थानान्तर्गत-ग्रहणी-रोगाधिकारे अम्लपित्तं नामतः उल्लेखात् पश्चात् अपि पृथक् रोगस्य रूपे वर्णितं न कृतम् अस्ति, अपितु इदं ग्रहण्याः एवम् अजीर्णस्य अवस्था-विशेषस्य रूपे मतम् अस्ति . एतेन अयं निष्कर्षः निस्सरति यत् यद्यपि अम्लपित्तं स्वतन्त्रस्य व्याधेः रूपे न कथितम् अस्ति, अपितु एतत् प्रकारकं लक्षणयुक्त-व्याधिः स्वीकृतः एवम् अस्य चिकित्सायाः अपि वर्णनं कृतम् अस्ति . एतेन इदं ध्वनितं भवति यत् अम्लपित्तं प्रमुखतया अन्योन्याश्रितः व्याधिः अस्ति. एतत् अस्य व्याधेः चिकित्सायाः करणस्य समये विशेष-ध्यातव्यं तथ्यम् अस्ति .

Increase in obesity and coronary heart disease and implication of fat in all such cases have made consumer awareness along quantity and quality of fat. Fatty acid composition of different fat has a profound effect of the clinical outcome in human beings. Simple modification in diet with certain fatty acids can have positive impact on a broad range of consequences on human health. Supplementation with omega-3 fatty acids has been found to be of potential value in treatment of heart disease, cancer, arthritis, hypertension, depression etc.

Alpha linolenic acid is the precursor of omega-3 fatty acids- eiosaentaenoic acid (EPA) and docosahexaenoic acid (DHA) and that are abundantly present in fish oil especially from mackerel, herring and tuna. Fish oil has EPA and DHA contents of 19.16 and 12.04g/100g oil. Omega-3 acids can also be obtained from pork, poultry and egg products.

Omega-3 fatty acids play an important role in our health, and well being in many ways. Linolenic acid is necessary for neural development of visual function and cerebral cortex. DHA is required for proper development of nervous system in the neonatal period in infancy. It also enhances the maturation of visual activity in infants. In adults, DHA is important for brain development and functioning including

comparatively better hearing abilities. It has also positive effect on diseases like myocardial infarction, thrombosis, hypertension, arthritis and several other diseases related to inflammatory disorder. Omega-3 fatty acids prevent arteriosclerosis by retaining the strongly protective High Density Lipoprotein (HDL) cholesterol which removes the harmful Low Density Lipoprotein (LDL) and excess total cholesterol from the peripheral tissues. HDL also protects by inhibiting the lipoprotein oxidation. Both EPA and DHA lower blood pressure in patients with moderate hypertension by decreasing the harmful PGES and increasing the beneficial PG12 metabolites. Omega-3 fatty acids have been found to prevent cancer of breast and colon in humans as well as animals by the mechanism of increase anti-angiogenic activity and inhibition of tumor cell growth. Omega-3 fatty acids rich foods increase the cell membrane content of both EPA and DHA. The increase takes place at the expense of arachidonic acid resulting in the competitive inhibition of pro-inflammatory group 2 eicosanoid productions and production of anti-inflammatory group 3 eicosanoid. During pregnancy these essential fatty acids play an important role in maternal health and neonatal development.

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Neurological tissues such as brain and retina contain high concentration of DHA. Brain DHA increases almost four times during first three months for pregnancy as well as postnatal life. Breast feed babies have been found to have higher amount of brain DHA than artificial infant food containing linolenic acid. Hence it is recommended that artificial infant food be fortified with long chain omega-3 fatty acids.

According to U.S. Food and Drug administration a daily intake of EPA and DHA of up to 3g/day is generally regarded as safe. Presently US Health services advise consumption of 7-10% energy as PUFA and 1-2% energy as linolenic acid. American Heart Association recommends consumption of 900mg DHA and 300mg EPA for preservation of heart disease. Canada recommends consumption of 1.2-1.6g omega-3 fatty acids per day whereas United Kingdom recommends 2.2g of linolenic acid and 1.1 g of DHA and EA per day in adults.

However a very high intake of omega-3 fatty acids (7-10g/day) increased the clotting time and may give rise to gastro-intestinal problems including loose stools. In many developing countries incorporation of omega-3 fatty acids to enrich the food product such as DHA rich eggs, meat milk, margarine, bread etc has proved successful. **In India, Omega-3 fatty acids are consumed through, fresh vegetables, oils (soybean, corn, sunflower,**

groundnut, canola, olive) and livestock products (meat, milk, egg) and there is awakening to develop omega-3 enriched food products within affordable cost.

Omega-3 fatty acid composition of some food items

Foods	Linolenic acid (g/100g)
Oils	
Canola	10.0
Almond	0.1
Flax	57.0
Olive	0.6
Corn	1.0
Rice bran	1.6
Safflower	0.2
Sesame	0.6
Soybean	6.6
Sunflower	0.1
Walnut	10.4
Cereals	
Wheat germ	0.7
Corn germ	0.3
Rice germ	0.2
Oat germ	1.4
Barley	0.3
Peas	0.2
Soybean	2.1
Common bean	0.6

Herbal Disinfectants for safe drinking Water

Dr. Usha Patil

Water borne diseases are a serious threat particularly to the poorer sections in the developing countries. In India the common water borne diseases are Diarrhea, Typhoid, Cholera etc. In every year, people are dying from these diseases. Several methods of disinfecting water for drinking have been developed as Biocides. (i.e. is a chemical substance capable of killing living organism). Some Biocides are also employed as antifouling agents & disinfectants. Chlorine is used as short life Biocide in industrial water treatment, disinfectant in swimming pools. But many Biocidal products pose significant risk for health & welfare. Great care is required when handling Biocides. These are having adverse effect on the natural environment. Disposal of used & unwanted Biocides must be undertaken carefully to avoid serious & potential long lasting damage to the environment.

In Ayurveda several methods of purification of water have been explained i.e. boiling & filtering, placing in the sunlight, putting some gems & herbs into the water.

The use of plants to disinfect drinking water has interesting insight into the traditional wisdom that developed effective practice without any knowledge of microbiology or the chemistry of the plants used. In this article a few herbal disinfectant drugs have been discussed, they are as follows.

1. Leaves of Tulasi (Ocimum sanctum)
2. Roots of Usheera (Vetiveria zizanioides)
3. Rhizome of Haridra (Curcuma longa)
4. Leaves of Nimba (Azadirachta indica)

1) **Tulasi (Ocimum sanctum)** This plant is found in the garden of almost every house. The word Tulasi means, its properties are incomparable to any other plants. It is favorite to Lord Vishnu & it is one of the divine plants.

In Vishnu dharana sutra (V.D.S. 79/17), surasa is used for Tulasi & it is used as a leafy vegetable. In Caraka Samhita Tulasi is used for respiratory disorders. In Samhitas two types of Tulasi have been mentioned i.e. white variety (flowers are white) & Black variety (flowers are black). It is also called Rama Tulasi. Among these two Krishna variety (Ocimum conum & Ocimum sanctum) is considered to be the best.

शुक्ला कृष्णा च तुलसी गुणैस्तुल्या प्रकीर्तिता।
In Kaideva Nighantu one more type has been mentioned i.e. Karpooora Tulasi (Ocimum kilimand schricum).

Therapeutic use of Tulasi in Ayurvedic texts
The juice of black variety Tulasi mixed with honey. It is used in cough (C.S. Ci 18/117). In worms infestation Tulasi is used along with honey can kill the worms. Tulasi has been used as Krimidosahara, Jantunashana, Bhoota nashanu (DN.RN.&BPN) & Durgandha nashana (Su.sam). These actions can be compared with the antimicrobial, anti-fungal, antiviral & antifouling agents. It also possesses antispasmodic, anticancer, anti-diabetic, antifungal & adoptogenic properties. Eugenol is the important active component of the drug which is responsible for these properties. Adoptogenic property is considered to be most important property of the drug because it increases the body resistance to stress, trauma, anxiety & fatigue. All adaptogens are

antioxidants but all antioxidants are not necessarily adaptogen. Adaptogen allows the body to counter adverse physical, chemical & biological stressor by raising non specific resistance towards such stress and have a normalizing influence on the body & maintaining the hormone & immune system. Recent Studies suggested that Tulasi may be cox-2 inhibitor, like many pain killer, due to its high concentration of Eugenol. It has antidiabetic effect on blood glucose level due to its antioxidant properties.

It is regarded in Ayurveda as a kind of elixir of life. Essential oil extracted from karpooora Tulasi is mostly used for medicinal purpose & in herbal cosmetics. It is widely used as an Antibacterial for centuries. The dried leaves of Tulasi have been mixed with stored grains to repel insects.

2.) **Curcuma longa(Haridra)**:- Haridra is one of the most important drugs described in Ayurveda & it has been extensively used are Kusthghna, Kandugna, Vishghna in Charka Samhita & Susruta Samhita.

In the vedic literature, Haridra is extensively described as Medhya dravya(Intellecutal) & it is indicated in Shwitra (Leucoderma).

In Atharvana Samhita it was used in jaundice & Kaushika Sutra has delineted Haridra as an Antidote for snake venom.

In Astanga hridaya this is a very good drug in प्रमेह i.e is हरिद्रा प्रमेह हरणाम् it is considered as best antidiabetic & anti oxidant drug. Curcumin derived from the curcuma longa is a gold coloured spice commonly used in the Indian sub continent not only for health but also for the preservation of food & as a yellow dye for textile. Curcumin was isolated two centuries ago, It exhibits anti oxidants, anti HIV,Anti bacterial,Nematocidal, action, These effects are mediated through the regulation of various factors like, growth factors,

inflammatory cytokine, protein kinase & other enzymes.

In Vitro studies show that curcumin exhibits antispasmodic activity & it has protective effect on the liver disorder & curcumin is less active when it is administered internally. It is having poor obsorption in the GIT on poor presystemic transformation.

Curcumin exhibits activities similar to recently discovered tumour necrosis factor blocker & venous endothelial cell growth blockers.

Considering the recent scientific bandwagon that multi targeted theory is better than monotargeted therapy for most diseases, it can be considered ideal spice for life.

Free radical mediated peroxidation of membrane lipid & oxidative damage of DNA & protein are believed to be associated with a variety of chronic pathological complications such as cancer, atherosclerotic neurological disease. Curcumin plays an important role in those pathological changes.

Anti inflammatory activities:- It inhibits cyclo oxygenase (cox-2) & lipooxygenase (Lox) & nitric oxide synthase. These are the important enzyme which play important role in the inflammatory processes.

Improper upregulation of Cox-2 & Ixox are important enzyme that mediate inflammatory processes responsible for patho physiology of certain types of human cancer as well as inflammatory disorder. Inflammation is closely linked to tumor promotion. Curcumin's its potent anti-inflammatory property is anticipated to exert chemo preventive effect of cancer.

Anti oxidant property of curcuma longa:- Anti oxidants neutralize the toxic & volatile free radicals. In biological system O₂ gives rise to a large number of free radicals & other

reactive species collectively known as Reactive Oxygen Species (ROS.) & another group of reactive species known as Reactive Nitrogen Species (RNS.). In normal healthy human, the generation of ROS & RNS are effectively kept in check by various levels of anti oxidant defence. Cellular damage induced by oxidative stress has been implicated in the etiology of large number of diseases & ageing. These include the intracellular anti oxidant enzyme & the dietary supplementation in the form of vit-c, vit-e, Betacarotene, Zinc & Selenium. Antioxidant also can act at different level of protection such as prevention, interception & repair.

Indian Medicinal plants provide rich sources of antioxidant at different level

1. Suppression of radical formation:- *Crocus sativus*, *Ocimum sanctum*, *Withania somnifera*, *Zingiber officinalis*.
2. Scavenging of primary radical :- *Curcuma longa*, *Ocimum Sanctum*.
3. Scavenging of secondary radical :- *Azadirachta indica*
4. Reconstruction of membrane :- *Curcuma longa*
5. Repair of damage :- *Ocimum sanctum*.

Vetiveria zizanioides:- *Usheera* (V-2,) belongs to poaceae family mainly used in the pittja & vataja disorder. i.e. burning sensation, ulcers, skin diseases, nausea, vomiting, diseases of blood & Cooling to brain. In Ayurvedic texts it is mainly used in krimi Roga (Worms infestation). In Kaushika Sutra, It has been used as Varnya (improves the complexion), Sthanya Janana (Galactagogue), Chardi Nigrahana (Anti Emetic), Dahaprasamana (Reduces the burning sensation) (C.S.) In the text it has got a synonym of sevyā i.e. is good for drinking purpose. In Kerala It is a tradition, some

household serve water boiled along with a few bits of vetiveria roots to disinfect water & add flavor to it.

Elattaria Cardamum:- Anti-oxidants in Aromatic & medicinal plant. Plants serving many purposes i.e. health, nutrition beauty a plant possess terpenoids & flavanoids which act as antioxidants. The essential oil derived from aromatic plants not only serve as dietary antioxidants expected to prevent several diseases caused by the free radicals.

Volatile oil containing the odour, taste, medicinal properties of the plants in concentrated form, Recent research showed that it protects body from various disastrous & chronic diseases like cancer, arthritis, cold, cough etc. which weaken the immune system of the body.

Advantage of using essential oil as

Antioxidant:-

Essential oil as antioxidant

1. Due to their small molecules size, they can easily penetrate the skin tissue.
2. Lipid soluble capable of penetrating the membrane easily even in conditions when O₂ deficiency leads to hardening of membrane.
3. Powerful antioxidant that produces adverse environment for damaging free radical that prevent mutation & oxidant in cell, These function as scavengers for free radicals.

Principles of Quality Control & Standardization Of Drugs

Dr Manish Aggrawal **Dr P Suresh *Prof. L.K. Dwivedi.*

In pharmaceutical manufacturing the Quality control must ensure that quality standards are constantly met to guarantee outstanding quality of raw materials, intermediates and final products.

The international Organization for Standardization (ISO) in ISO: 9000 has defined quality control as,

“Quality control is operation techniques and activities that are used to fulfill requirements for quality of a drug, This involves the identification of material and the determination of its quality, purity and if adulterated the nature of the adulterant.”

The concept of quality control can be further stated as it is an essential tool to achieve the following objectives:

- (1) To maintain product within predetermined limits of acceptability
- (2) To identify the possibilities which could narrow these limits
- (3) To identify the causes of variation and remove them
- (4) To reduce cost of production and inspection
- (5) To predict impending quality changes and prevent them

The main importance of quality control is, to ensure quality and acceptability of drugs. This can be further simplified by saying that quality control involves control of raw material (including packaging material), manufacturing, and packaging processes by using suitable

methods & laboratory facilities for testing and inspection.

If quality control is to be exercised it must follow certain pre-established criteria called as Standards. Under 'Drug & Cosmetic act' 1940 for the standardization of drugs lots of pharmacopical standards were developed in India. I.e.-

CCRIMH 1969

CCRAS 1978

CCRUM 1978

CCRH 1978

CCRYN 1978

The following requirements are essential for quality control & standardization of drugs-

• **Literary Resources :-** Formularies & Pharmacopeias are published for this purpose.

• **Museum & Herbarium:-** For Proper identification & to avoid adulterated drug Museum & Herbarium is essential.

• **Pharmacognosy Division:-** To Know the morphology & anatomy of plant drugs.

• **Chemistry Division:-** To determinate specific gravity, ash value, loss on drying etc.

• **Microbiology & Toxicology Division:-** Microbial Limit test for Escherichia coli, Salmonella, Pseudomonas, Staphylococci etc. To know the toxic effect of final product schedule E is established.

One should follow the following standards :-

• **Raw material standards**

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- Intermediate standards
- Packaging material standards
- Operating standards
- Finished product standards

Raw material control is most important aspect in quality control. It involves inspection, sampling, testing of raw material and taking decision as to their suitability or unsuitability. Storage of raw material is also important as some drugs are adversely affected by heat, light or humidity. It is advisable to keep reference sample of raw materials. These may be of help in case of complaints from dealers and consumers.

Packaging material control too requires inspection, sampling, testing, before packing. Packaging material includes container, closures, labels, cartons, and secondary material like corrugated boxes. Inspection is organized in trail run method with statistically selected containers. All the packaging work is performed in dry and covered places.

Intermediate product control at the time of manufacturing process, physical characteristics of the product and organoleptic examinations are valuable. These can be undertaken by an experienced person. During filling, checking of net contents in containers is necessary to avoid unnecessary large over weights. Closures should be properly applied.

Finished product control for complete satisfactory handling of the finished product, the finished product must have code by which its history can be traced. Reference sample of finished products should be preserved for investigations, in case of complaints.

Shelf life testing is done by keeping product in room temperature and it is tested on regular intervals of time. This testing is supplemented by severe conditions like high temperature, and low temperature, high & low humidity and exposure to direct sun light. Exposure of product to stress condition and its testing is correlated to its shelf life.

Market control In this topic study is required “How the product will behave in the market” following points are important:-

- By collecting samples from market; and interpreting the result satisfactory or need correction.
- By prompt handling of complaints from market. The complaint focuses attention on weakness of the product.
- By scrutiny of return goods. Product returned by market may not always be due to quality defect. Examination of these goods can point out to the characteristic of the product which requires improvement.

Conclusion

Good quality is life enhancing, bad quality is life threatening. Due to increased FDA scrutinizing manufacturing quality is increasingly a key driver in successful & timely product launches, optimizing revenue streams, enhancing the company's reputation and maximizing share holder value.

Asthma in Ayurveda

**Dr. Rashmi Khanna **Dr. Nitin Vaidya*

Asthma is a chronic lung disease that causes severe inflammation in the airways. Asthma “attacks” are usually triggered by environmental factors, as is the case with inhaled allergens like pollen or pollution, and in some cases due to food allergies. During an asthma attack, the airways in the lungs become inflamed, constricting air flow and thus resulting in wheezing and coughing, combined with a feeling of constriction in the chest. **Incidence of Asthma is considerably increasing, in today's stressful modern urbanized living. According to one survey, 15% of Indian population suffers from Asthma and in developed countries like USA every year there is 10% increase of Asthmatic patients.**

Ayurveda, one of the oldest systems of medicine in the world, views asthma and other diseases as a result of a person being out of harmony with the universe. Disruptions can be physical, spiritual, and/or emotional. **There is versatile approach of Ayurveda to get at root cause of the problem and it helps in preventing the disease rather than treating it.** The Ayurvedic treatment during an acute asthmatic attack involves relieving the distress of breathing. Ayurvedic medicine offers therapies that reduce the symptoms of, or even help eliminate, asthma over time, helping to control the chronic condition. Integrating Ayurvedic medicine with modern Western medicine can lead to an effective treatment for asthma.

In Ayurveda, asthma can be correlated with **“SHWASA ROGA”**.

Nidana (Causes) (Su. Utt. 50/3-5, A. H. Ni. 4/1):

A) Factors related to diet:

1. Excessive indulgence in black grams, raw milk, sour curd, excess salt, flesh of aquatic and wet land animals.
2. Excessive use of 'Ruksha' (dry) and 'Guru' (heavy) diet.
3. Excessive use of cold water and cold drinks.
4. Excessive use of 'Abhishyandi' (Kapha producing) diet such as curd etc.
5. Excessive use of not easily digestible and irritant food.

B) Factors related to work:

1. Excessive exposure to dust and smoke.
2. Excessive exposure to cold wind.
3. Excessive cold bath.
4. Excessive sun bath.
5. Exhaustive exercise & walking.
6. Excessive sexual activities.
7. Suppression of natural urges.

C) Other Factors:

1. Trauma to vital organs viz. - chest, throat etc.
2. Asthma may be as a sequelae in other diseases like -
Fever, Long standing common cold, Tuberculosis, Anaemia, Heart disease, Poisoning etc.

Samprapti (Pathogenesis)

(Su. Utt. 51/4, Ch. Chi. 17/45):

The vitiated 'Pranavayu' combines with deranged 'Kapha dosha' in the lungs causing obstruction in the 'Pranavaha srotasa' (Respiratory passage). This results in gasping and laboured breathing. This condition is known as 'Shwasa Roga'

Types:

Five types of 'Shwasa Roga' are described in Ayurvedic texts (Su. Utt. 51/5, A. H. Ni. 4/2):

- 1) Maha-Shwas
- 2) Urdhva-Shwasa
- 3) Chhinna-Shwasa
- 4) Tamaka-Shwasa
- 5) Kshudra-Shwasa

Among these five types first three are not curable. Tamaka-Shwasa is 'yapya' (Controllable) and is difficult to cure. The last one is curable. More than 75% of the cases belong to last two categories.

Clinical Features:

Symptoms:

1. Dyspnoea
2. Coughing,

Signs:

1. Feeling of constriction in the chest.
2. Wheezing.

Asthma, from an Ayurvedic perspective, is primarily a **Kapha dosha** syndrome (Ch. Chi. 17/8).

***Asthma with the predominance of Kapha dosha** has symptoms of cough and wheezing with abundant clear or white phlegm. The lungs will be full of water, producing a crackling or rattling sound. Attacks occur during morning and evening.

***Asthma with the predominance of Pitta dosha** involves coughing and wheezing with yellow phlegm. Other symptoms include fever, sweating, irritability, and a need for cool air. Attacks come around noon and midnight.

***Asthma with the predominance of Vata dosha** has symptoms of dry cough and wheezing, dry mouth, dry skin, thirst, constipation, anxiety, and craving for warm drinks. Attacks occur mostly at dawn and dusk.

Treatment in Ayurveda:

Preventive Tips:

1. Avoid cold and damp places.
2. Go for morning or evening walk, do yoga mainly 'Pranayama'.
3. Avoid over-eating. Take light dinner one hour before going to bed.
4. Avoid Tobacco, wine and smoking.
5. Keep rooms well ventilated. Avoid air conditioners, coolers and direct air of fan.
6. Avoid perfumes, Agarbatti, Mosquito repellents etc.
7. Drink boiled water in plenty.
8. Avoid excessive exercise and over indulgence in sex.

Goals of Ayurveda for Treating Asthma:

Treatment using the Ayurvedic approach is determined by the particular dosha imbalance experienced by the asthmatic individual. Patients need to actively participate and be willing to alter diet, lifestyle, and habits for treatment to be effective. Treatment includes reducing symptoms, eliminating impurities, reducing anxiety, increasing disease resistance, and increasing harmony in the patient's life.

A variety of methods are used, including:

• **Reducing symptoms.** Dietary changes, physical exercises, stretching, breathing exercises, meditation, massage, and/or lying in the sun are prescribed to reduce the symptoms. Herbs might be prescribed, along with tiny amounts of metal and mineral preparations, such as gold or iron.

• **Eliminating impurities.** A process called *Panchakarma* is used to cleanse the body by eliminating undigested food that interferes with healthy functioning of the body. Panchakarma focusses on both the digestive and respiratory systems. Enemas, massage, medicated oils administered in a nasal spray, and other methods may be used.

●**Increasing disease resistance.** Combination of several herbs, vitamins, proteins, or minerals in tonics may be prescribed to improve digestion and increase appetite and immunity.

●**Improving harmony and decreasing anxiety.** Avoiding situations that cause worry and using techniques to release negative emotions are recommended.

General Measures:

During attacks - Apply warm 'Til tail' over chest and back (Ch. Chi.17/71, Su. Utt. 51/48, A. H. Chi. 4/1).

- Apply fomentation (Ch. Chi.17/71, Su. Utt. 51/48, A. H. Chi. 4/1).
- Take 'shunthi powder' 1/4 tea spoon + 'Kali mirch' 6 + 'Kala namak 1/4 teaspoon + 5 leaves of 'Tulsi', SBoil this mixture in 200 ml water reducing it to 50 ml. Filter and sip it.
- Mix a couple of leaves of the holy basil with honey and consume them every morning. This is a very effective remedy to keep asthmatic attacks away.
- When an attack is about to come, then chewing on some leaves of the holy basil mixed with rock salt.
- In order to clean the respiratory tract, roast gram and have them with milk just before going to bed.
- Grind some turmeric (use old turmeric for better results). Mix one teaspoonful of this powder with one tablespoonful of honey (again, the honey must be as old as possible). This is to be taken orally. This recipe is believed to work even when all other methods fail.
- For asthma in the early stages, it is beneficial to chew on some black pepper before going to bed.
- For temporary relief from asthmatic attacks, mix some leaves of the holy basil with black pepper and consume them.

●One more remedy is to mix some lemon juice with ginger and consume it once a day.

●Chewing a single fruit of the Chebulic Myroblan (harad) every night will give tremendous relief from asthmatic attacks.

●Boil six cloves in half a cup of water. Take a teaspoonful of this decoction with honey thrice a day.

Herbs Useful for the Management of Asthma:

- Piper Longum* builds up resistance against respiratory tract constriction and inflammation. Taken over a period of time, it builds a strong immunity against allergens.
- Adhatoda Vasica* manages allergic disorders and bronchial asthma. Research indicates that the alkaloids in the leaves stimulate respiratory activity.
- Thylophora Asthmatica* is an anti-inflammatory and acts as an expectorant. It also suppresses unnecessary immune responses and may boost other types of immunity.
- Terminalia Chebula* or Gall Nut has rejuvenative, laxative, and expectorant effects.
- Arjuna** (*Terminalia arjuna*)
The bark of the arjuna plant has benefits in the treatment of asthma. It is taken in a powder form sprinkled on the preparation of rice and condensed milk known as kheer.
- Asafetida** (*Ferula fetida*)
Along with whooping cough and bronchitis, asafetida is also useful in the treatment of asthma. For better results, its gum is taken in a mixture with honey.
- Myrica nagi** (Bay Berry)
Bay berry bark is effective in the treatment of asthma. It can be taken in the form of either a decoction or a powder.
- Trachyspermum ammi** (Bishop's Weed)
Bishop's weed is an expectorant. It can relieve dried up phlegm within the respiratory tract. It can be taken with buttermilk for best results.

●**Solanum nigrum** (Black Nightshade)

Black nightshade can remove the catarrh and phlegm deposited in the bronchial tubes. Its fruits are taken for the remedy.

●**Apium graveolens** (Celery)

Celery has antispasmodic properties; hence it is beneficial in the treatment of asthma. Either the herb itself or its seeds can be used for the purpose.

●**Syzygium aromaticum** (Clove)

Clove has expectorant properties; hence it is effective in the treatment of asthma.

●**Allium sativum** (Garlic)

Regular use of garlic can reduce the severity of asthmatic attacks.

●**Zingiber officinale** (Ginger)

Ginger is used in treatment of asthma due to its expectorant properties.

Ayurvedic Medicines for Asthma:

Two widely known Ayurvedic preparations for treating chronic asthma are *Chyawanaprash* and *Agastya Rasayana*.

The primary ingredient of *Chyawanprash* is a fruit called *amla*, which is the richest source of vitamin C in nature. This remedy is especially helpful for emaciated sufferers.

Agastya Rasayana is prepared with Chebulic Myroblan as its main ingredient. Along with Chyawanprasha, it is commonly prescribed to asthmatic patients.

Other useful preparations include *Sitopaladi Churna*, *Shwasa-Kasa-Chintamani Rasa*, *Shwasa Kuthhar Rasa*, **Vasavaleha**, **Kantakaryavaleha**, **Vasarishta** and **Kanakasava** etc.

Sitopaladi choorna is a very common

medicine taken by asthmatic patients. It is to be taken thrice or four times a day, mixed with honey. One alternative to sitopaladi choorna is the **Pippaladi choorna**.

Pathya-Apathya for Asthma:

The following dietary guidelines must be followed in order to reduce asthma:-

●Sour foods such as curd and buttermilk must be avoided.

●Cold fruits such as bananas, guavas, watermelons and papayas are very risky as they can build up phlegm in the bronchial tubes.

●Fried and pungent foods must be avoided.

●Alcohol must be avoided.

●Excessive physical exercise must be avoided.

●Exposure to damp environment must be avoided.

●Exposure to cold should also be avoided.

●Dry grapes are beneficial in asthmatic patients.

●Light diet should be preferred.

Bad Prognostic Sign In Ayurveda- An Overview

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ABSTRACT:-

Prognostic consideration is an integral part of medical diagnosis and treatment. Unfortunately with the advent of technological glorification in medical world the physician is more inclining towards machine rather than his own intelligence and reasoning. So a great inadequacy is prevailing in this area. In ayurveda this topic has been described with utmost practical consequences and logical approach which endows the physician with crown of success. Accurate knowledge of prognosis without any investigation accelerates the clinical excellence of physician. The topic will explore the various aspects of fatal signs & symptoms concerned with measurement of residual span of life.

Key words: - Indriya jnana, fatal signs, imminent death etc

Indriya sthâna is dealt with the definite signs of incoming death, just as the flower, smoke and appearance of clouds are the signs of future occurrence of the fruit, fire and rain respectively¹. Every death is essentially associated with fatal signs and no life is left when a *ristas* are seen². Physician falls into dilemma when he does not understand those signs and treat them as non-fatal signs and vice-versa due to inexperience. The signs resembling grave condition manifest due to grave increase of *dosa*. Abnormal changes of the *prakrti* are also called as fatal signs. A physician should have a wide acquaintance with all related matter before entering into the true treatment procedures. Ayurveda, being a strong follower of *sat-kâryavâda* always has viewed that every *kârya* evolve from the intimate out come of its cause. Here result in the form of fatal sign is immediate and intimate antecedent to the cause's i.e. *Nidânâdi*. In other words these signs are the final end product of the pathogenic path incorporating all the three cause in an inseparable and irreversible conglomeration. So physician having adept knowledge in etiology and the pathogenesis, with the experience might be able to visualize the upcoming fatal state and

predict the fate. *Acârya Caraka* has described various aspects of fatal signs under twelve chapters and these have been elaborated before *cikitsâ sthâna* because of their immense importance. If we give a closer insight in these chapters and matter discussed under this heading then it reveals that these are irreversible, ultimate and terminal stages of pathogenesis of respective diseases. The entire topic has been depicted under forty seven (47)³ parameters through which the final and optimum knowledge of life as well as its ends can be assumed. When appearance, size, shape, colour, sense organs, voice, speech, shade, complexion, image, function and many other faculties and factors undergo changes from their normalcy without any apparent reasons are all to be considered as fatal sign. The feature of this fatal state have been categorized into two broad headings i.e. The features belonging to patient⁴ and other related to external features which definitely signifies the personal, social and environmental impact on life. Disease wise description is not mentioned on account of its subtleness and gravity. These are scientifically and analytically depicted as per the perceptive cognition. The main means, for gaining this supreme knowledge is sense

organ. So to know and become well versed and to have a great acquaintance about this bad prognosis, a closer emphasis is given on the physician's ability.

A complete success is achieved when proper prognosis is made before going for treatment. The physician undertaking the treatment of incurable diseases would only subject himself to loss of wealth, learning and fame as well as reputation and ultimately would lose confidence of people⁵. Such a situation can be avoided if the physician is fully aware about various aspects of fatal symptoms of imminent death.

Sudden manifestation of bad prognostic feature may be due to effect of past deed⁶ and some are as a result of indulgence of etiological factor⁷. But some unnatural features without any apparent cause if manifested indicate the short span of life.

These unnatural anomalies are mostly related to various aspects of fatal symptoms of the patient and some are due to environmental condition of the person. Keeping this view forty seven prognostic parameters are explained in detail to observe different aspects of fatal symptoms before *cikitsā sthāna* for enhancing the knowledge of physician. The features of imminent death related to person are mostly based on anomalies of physical character & sense faculty⁸, psychological anomalies related to dreams & habits⁹, pathology related anomalies based on relative premonitory symptoms¹⁰, anomalies of luster & shadow¹¹ etc should be examined thoroughly. A variety of aspects of imminent death such as anomalies of physical character like hoarseness of voice and impairment of complexion¹² etc, psychological abnormalities like radical changes in conduct¹³, destruction of sensory faculties, impairment of consciousness, deprivation of memory, intellect & natural modesty¹⁴ etc, observation of Terrible dreams¹⁵, perversion in the reflected image and luster¹⁶. Manifestation of attributes of opposite nature in different part of the body should be examined thoroughly by *trividha rogi parikṣā*.

These unnatural situations are not causative factors in real sense for manifestation of abnormality; they serve as a yard stick to measure the span of life. Other features of imminent death like sudden appearance of smoke over the head¹⁷, similar features of cow dung powder in the head¹⁸, white spots (flower like) in nail¹⁹, clay like appearance of teeth²⁰ etc are the indicative features of remaining period of life should be observed carefully. Some other features which are not based on the person like manifestation of inauspicious sound, touch, taste, vision, smell, action & thought in the physician while treating the patient, if omen observed by the physician on the way to the house of the person²¹ and other inauspicious features related to messenger etc are due to the effect of the past deed. Manifestation of all the inauspicious signs all of a sudden and diminution of normal characteristic feature of the body indicate that the patient is about to die²². The objects are perceived wrongly by a healthy person who is about to die due to mental perversion²³.

But the physician should not have any doubt in differentiating pseudo symptoms and fatal symptoms²⁴. So the physician should be conversant with various aspects of fatal signs entirely²⁵. Along with in depth knowledge, various indicative feature of imminent death should be observed closely since some of them disappear in a short moment²⁶. Instead of wide acquaintance, it is very difficult to detect various features of premonitory indication of death and especially those related to sense organs due to subtleness of sense faculties. While approaching for treatment, difficulty in obtaining the desired drug and if its action can not be manifested in concern with their potency²⁷ and quick aggravation of disease overcoming strength and vital essence²⁸ of the body are the features of bad prognosis. A recognized drug which is successfully tried in many other cases does not yield result while administered to the patient who are about to die²⁹. There can be no exhibition of properties when the substance is not present to which they inhere like that there

is no role of efficient *catuspâd* for treating the man who are about to die³⁰.

CONCLUSION:-

Indriya jnâna and knowledge of fatal signs is a unique and ultimate clinical aptitude of the physician which shows the superlative basis of ayurvedic treatment approach. In this era medical world is engaging to discover new enterprise and techniques and is depended on investigation and machine rather than clinical excellence of the physician. So it is the high time to analyze and interpret this in the practical and clinical parlance in order to regain the golden spirit of clinical practice.

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वातव्याधिरपस्मारी कुष्ठी शोफी तथोदरी ।
गुल्मी च मधुमेही च राजयक्ष्मी च यो नरः ॥
अचिकित्स्या भवन्त्येते बलमांसक्षये सति ।
अन्येष्वपि विकारेषु तान् भिषक् परिवर्जयेत् ॥
(च.इ. 9/8-9)

A Comparative Study By Spectrophotometric Analysis of Sennoside-b In Senna Leaf Collected From 3 Different Parts Of India Rajasthan, Tutikorin & Gujarat

**Dr. Sandipan Santra ** Dr. Pallavi Mukherjee*

Indian Senna or Svarnapatri is native to India and cultivated mainly in the temperate climate of Southern and Western India. It is perennial shrub growing up to in hilly region and possessing yellow flowers. The parts of this plant used medicinally are the leaves and the pods. Leaves have a purging quality but afterwards have a binding effect. Both leaves & pods are used in many pharmaceutical preparations, because the leaves and pods of this plant contain the important laxative Sennoside-B

OBJECTIVE

Selection of best Variety of SENNA Leaf as a stimulant Purgative (Hydroxyanthraquinone derivative i.e Sennoside B) .Analysis done by spectrophotometer to determine the Sennoside B in 3 different varieties of Senna leaf cultivated in 3 separate areas Rajasthan, Tutikorin (Tamilnadu), & Gujarat.

AYURVEDIC REVIEW

Synonyms Markandika, Bhumiballi, Mridurechani, Nakuli etc.

Properties Ruksha, Ushna, Tikshna & Shodhani.

Action Rechaka, Kusthahara, Eradicates prameha gulma & Udara roga.

Parts of Use leaves & Pods.

Good Variety Pitatanu (Yellowish leaves)

Therapeutic uses

- In abdominal cramps Senna should be administered with Sunthi & Satapuspa.
- For purgation Senna should be used with milk.
- In Pittaja jwara Senna used with Amaltas

Dose 0.5 gm powder.

Formulations Panchasakar Churna.

Sarivadyasava.

Yastyadi Churna.

AIMS & OBJECTIVES

1. Determination of Hydroxy anthraquinone derivative i.e. Sennoside B from the best variety of Senna leaves.
2. Analysis will be done by Spectrophotometer.
3. Three different climatic leaves (From Rajasthan, Tutikorin, Gujarat) will be selected for the analysis.

Selected herb :

Latin Name : Cassia angustifolia, Vahl.

Family : Leguminosae

Part used : Leaf

Habitat : Southern Arab, Southern India, Western part of India

Place of collection :

- (A) Originated from Rajasthan (Sanaya) 1.54gm
- (B) Originated from Tinnevely of Tutikorin (Nilappannai) 1.54gm
- (C) Originated from Gujarat (Mindhiaval) 1.54gm

Collection Time : January & February

Characteristic features: Leaf is Yellowish Green, size measure 2.5-6cm long, 7-8mm wide & Characteristic odour

IDENTIFICATION OF SENNOSOID B

(Colour reaction by Borntraeger test for anthraquinone glycoside) Boil aqueous extract of Drug (25 gm powder drug in 50ml of water) with 2ml of Hydrochloric acid for 15 minutes
→ keep for self cooling & shake with 40ml of Ether → Separate the organic layer → evaporate 5ml to dryness → cool it → add 5ml of Amonia solution → A orange colour develops → heat on water bath for 2 minutes → A reddish violet colour develops → Indicates the presence of sennosoid-B

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Result : Positive for Sample (A) , (B) , (C)

Physio-chemical tests

Specified test	Sample A	Sample B	Sample C	Limit (A.P.I)
1. Foreign matter	Negligible	Negligible	Negligible	Not more than 1%w/w
2. Total ash	7.54%w/w	5.88%w/w	9.47%w/w	Not more than 14%w/w
3. Acid insoluble Ash	1.35%w/w	1%w/w	1.54%w/w	Not more than 2%w/w
4. Alcohol soluble extractive	19.5%w/w	22%w/w	18%w/w	Not less than 3%w/w
5. Water soluble extractive	27.88%w/w	32.54%w/w	24.47%w/w	Not less than 25%w/w
6. Loss on Drying	8.5%w/w	7.5%w/w	8.5%w/w	Not more than 12%w/w

QUANTITATIVE ESTIMATION OF SENNOSIDE-B

It is done to determine the % of Sennoside-B

Assay By Spectrophotometer

0.15 gm SENNA LEAF POWDER +30ml of water→Reflux for 15min & then centrifuge→After self cooling 20ml of the solution taken & add 0.1ml 2Molar HCl →Extraction with 3 quantities each of 15ml of Chloroform →Discard the Chloroform layer→Add 0.1gm Sodium bicarbonate, Shake for 3 min & centrifuge→10ml taken, mix 20ml 15% Anhydrous Ferric Chloride4 solution →heat under reflux condenser for 20min→ Add 1ml HCl, continue heating for 20min until the ppt is dissolved →keep for cooling → Extraction with 3 quantities each of 25ml of ether →Wash with water for 2 times with 25ml of water→combine the extract & dilute to 100ml with ether→Evaporate 10ml to dryness, dissolve the residue in 10ml of 0.5%w/v solution of Magnesium acetate in Methanol →Measure the absorbance at 515nm, using Methanol as the compensation liquid.

Percentage concentration of Sennoside B = $A * 1.25/m$

Taking the specific absorbance to be 240

A= absorbance at 515nm

M= mass of the substance to be examine in grams
(Weight of Senna Leaf)

RESULT

Sample	Absorbance in 515nm	% of Sennoside B	Limit B.P 2002
A	0.239	1.94%W/W	Not less than 2.50%w/w
B	0.321	2.60%W/W	Not less than 2.50%w/w
C	0.189	1.53%W/W	Not less than 2.50%w/w

Conclusion

Complies the above test it reveals that the sample (B) is the best variety of senna leaf which contains maximum percentage of Sennoside B (2.6%) more Water & Alcohol soluble extractive (32.5% & 22%), less moisture content(7.5%) minimum ash value(5.885)

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Preventive Measures for Eye Diseases

Dr. Mamta Mittal*

Dr. Pramod. K. Chaudhary**

Dr. R.P.S. Chauhan***

Eyes are the window to the mind. A pair of sparkling eyes is the most important attractive factor in a person. Eyes are greatly valued by ancient Indians and much importance has been given to their protection as

चक्षुरक्षायां सर्वकालं मनुष्यैर्यत्नं कर्तव्यं जीगृते याणदिच्छा।
व्यर्थं लोकोऽयं तुल्यरात्रिन्दिगानां पुंसांमन्धानां विद्यमानेऽपिषिते ॥
(अ.ह.उ.13/8)

i.e. All out effort should be made by men to protect the eyes throughout the period of life. For a man who is blind, this world is useless, the day and night are the same, though he may have immense wealth. So everyone should do every effort for the prevention of eye diseases. The basic principles of Ayurveda are based on *tridosha* (*vata*, *pitta* and *kapha*) which are responsible for normal functions of body and when vitiated lead to diseases. The role of *doshas* are different from organ to organ so the etiological factors for vitiation of *doshas* is also different for different organs. In the eye *Alochaka pitta* is considered as responsible factor for visual perception i.e. of all the *mahabhootas*, *tejas* dominates (in proper functioning of eyes) so these eyes are specially susceptible to *kapha*. That's why the factors which are vitiating to *pitta* or *kapha* will lead to eye diseases.

To overcome these factors, ancient medical scholars prescribed specific diet (*ahara*), drugs (*aushada*), and daily regimen (*vihara*). Out of these three, *ahara* and *vihara* play a central role in the prevention of eye diseases.

AHARA (Dietary factors):

Diet is the basis of all functions of the body. The dietary factors which adversely affect the

eyes are called as *achakshushya ahara* (*apathya* for eyes) and these should be strictly prohibited as

· Sour items like *curd*, pickels etc., *vidahi* and hot items (*ushana virya ahara*) which vitiate *pitta*.

· *Virudha aharam* (like milk with fish, cold and hot items together) and *adhyasanam* (eating before digestion of previous meal) will derange normal digestion mechanism, *dushita agni* which deranges the properties of *raktadhathu* and in turn its functional capacity becomes defective. This develops the stage of *abhishyanda* which is the initial pathological change in the development of any eye disease.

According to modern science also overeating predisposes to premature ageing which is an impediment to longevity. Now a days the major causes of blindness are cataract, corneal scarring and retinal diseases (ARMD) which are age related, so intake of restricted diet is advised because it slows not only the rate of ageing but also delays the onset of age related diseases as well as physiological deterioration of various organs and systems. Restricted food intake either

1. Increases the efficiency of cellular metabolism
2. May act by lowering the blood glucose levels
3. Decreases the activity of so called free radicals the toxic by- products of normal metabolism so can prevent from age related diseases.

So according to *Ayurveda* the persons who are fond of their eye's health should always adhere to the following dietary products like grains such as *yava*, *godhuma*, *Sali*, *shastika*, *mudaga* etc. which are old and which mitigate *kapha* and *pitta* mixed with more of *ghrit*,

vegetables, meat of animals of *jangala desha*, *dadima*, *sita*(mishri), *saindhava*, *triphala*, *draksha*, rain water(i.e. pure cold water) for drinking. For the use of *triphala* ,*Acharya Vagbhata* has advised;

त्रिफला मधुसर्पिभ्यां निशि नेत्रबलाय च। (अ.ह.सू.8/44)
i.e. *Triphala* along with honey and *ghrit* (butter fat) should be consumed at nights daily for strengthening of eye sight. Any other things which are good for promoting / maintaining health and cure of diseases can also be consumed habitually.

VIHARA(Habitual and occupational factors):

Certain habits and occupational factors directly influence the eyes. These in turn may lead to eye diseases as:

- Hot water head bath and excessive smoking by vitiating *pitta*.
- Day time sleep and night awakening disturbing the normal functions of rods and cones causing eye strain
- Looking at too small and too distant objects, continuous watching of moving object (TV & computer) reading in moving vehicle or in incorrect posture (i.e too near or at too distant) all these lead to eyes strain
- Suppression of urges (especially of *nidra* & *ashru*) affect the normal function of lacrimal gland and thereby decrease moistening of eyes
- Cold water bath when body is hot, using too high pillows causes circulatory disturbances which in turn affect the mechanism of nutrition and it leads to eye diseases.
- Air pollution and light pollution are also the main causative factors of eye diseases.

So we should try to refrain ourselves from all these leading factors of eye diseases. To keep the eyes healthy some practices for daily regimen are advised in Ayurveda as

- Use of *anjana*(collyrium):** Daily practice of *Souveeranjana*(as *dincharya*)is advised as

best simple ophthalmic medication to prevent eye diseases.

- Use of *nasya*:** Specially *Anu taila nasya* (in the form of *pratimarsa nasya*) is advised because it cleans the *srotas* by its action and in turn prevents the accumulation of vitiated *kapha* in the *srotas* of the eye.

- Proper sleep:** Daily 6-8 hrs. sleep is necessary for a normal adult.

- Care of feet:** Regular massage of feet is advised because at the centre of feet (soles) two *siras* are situated which are greatly connected to the eyes. These transmit the effect of medicines applied over the feet in the form of bathing, massage, external application of oil etc. to the eyes and when vitiated by the accumulation of the *mala*, assault, stone and other hard substances and then bring about abnormalities of the eyes, Hence feet should be kept clean, healthy and away from heat by using foot wear, washing them well and massaging with oil.

- Prevention from air pollution by using plane glasses during journey.

So those who wish to have prolonged healthy vision should strictly follow the practices and daily regimen prescribed by ancient scholars because

PREVENTION IS BETTER THAN CURE.

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Meat Consumption and Health: An Overview

Girish Patil, S.

Introduction:

Balanced food is the basic requirement for healthy living. To get the required nutrients human diet must contain requisite sources of carbohydrate, fat, proteins, vitamins and minerals. Meat is a food which provides adequate supply of animal protein of high biological value as compared to that of vegetable proteins. It is also a good source of minerals and vitamins. However, several apprehensions regarding effect of meat consumption on health do exist among consumers. This article tries to put forth these issues for the health conscious consumers.

Nutritive value of meat:

Meat is considered as a protein rich food, because its composition matches the human protein. Meat contains all the essential amino acids required for human beings. It is also a good source of minerals like potassium, phosphorous, iron, zinc and copper. Owing to high prevalence of iron deficiency in India, especially among women, meat helps to meet the requirement of iron as red meat contains about 3 mg of iron per 100 g meat. Iron from meat is absorbed 3 to 5 times more readily than plant source. It is also rich in Vitamin A and Vitamin B complex especially thiamin, niacin, riboflavin, and cyanocobalamin. Cooking leads to loss of thiamin up to 15 to 40 % on boiling and 50 to 70 % on canning.

Table 1: Composition of meat

Sr. No	Component	% weight
1.	Water	75.0
2.	Protein	19.0
3.	Lipids	2.50
4.	Carbohydrate	1.20
5.	Vitamins	Traces

Apart from meat animal byproduct like liver is also a good source of Vitamin A, B1 and Nicotinic acid. Cholesterol content will be more in offals than that of meat.

Table 2: Concentration of Poly Unsaturated Fatty Acids and Cholesterol in meat

S.No	Type of meat	Essential fatty acids (as % of total fatty acids)			Cholesterol (mg/ 100g)
		Linoleic acid (C 18:2)	Linoleic acid (C 18:3)	Arachidonic acid (C 20:4)	
1.	Beef	2.0	1.3	1.0	59
2.	Mutton	2.5	2.5	---	79
3.	Pork	7.4	0.9	Traces	69
4.	Brain0.	4	---	4.2	2200
5.	Kidney, Sheep	8.1	4.0	7.1	400
6.	Liver, Sheep	5.0	3.8	3.0	430

Health concerns related to meat:

Consumption of meat is associated with coronary heart disease, hypertension and cancer.

1)Meat consumption and carcinogenesis: It is widely believed that meat consumption enhances the chances of getting cancer of large intestine (colon cancer). It is supposed that high transit time of meat in intestine promotes growth of anaerobic microorganisms like *Bacteroides* which produce 7 α dehydroxylase, an enzyme which converts cholic acid to suspected carcinogen, deoxycholate. However, by increased consumption of fibrous vegetables this problem can be overcome. Some experts feel that meat by itself will not cause carcinogenesis but the extraneous matters like benzpyrenes produced during smoking and anabolic hormones used for growth promotion may be the culprits.

2)Meat consumption and cardiovascular diseases: Meat constitutes class of food which is having higher amount of energy due to presence of fat and lesser amount of fibre. High blood cholesterol and high blood pressure are associated with coronary heart diseases are caused by food rich in fat especially saturated fat which increases the level of cholesterol in blood plasma. However, genetic predisposition and sedentary life style

also contributes for these conditions. Genetic predisposition is the major cause for cardiovascular diseases. Maintaining strict exercise routines considerable brings down the occurrence of cardiovascular disease. Salt added in cured meats also contributes to hypertension. Several low salt meat products have been developed to solve this problem
Conclusion: To meet the recommended level of 1 g protein of high Net Protein Utilization (NPU) per Kg body weight per day consuming meat is essential. With increasing population and shrinking arable land dependence of billion people on vegetable protein is not a feasible

proposition. Balancing the meat consumption with consumption of fibrous vegetables and maintaining healthy life style will help to live healthier and for longer.

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प्रीणनः प्राणजननः श्वासकासक्षयापहः ।
वातपित्तश्रमहरो हृद्यो मांसरसः स्मृतः ॥
स्मृत्योजःस्वरहीनानां ज्वरक्षीणक्षतोरसाम् ।
भग्नविशिलष्टसन्धीनां कृशानामल्परेतसाम् ॥
आप्यायनः संहननः शुक्रदो बलवर्धनः ॥

(सु.सू. 46 / 359–360)

Diarrhoea in Children

* Dr. Rakesh K. Nagar (Lecturer) **Dr. Kamla R. Nagar (Lecturer)

Normally the food we eat is digested in stomach and the intestines where the food mixes with the digestive juices. When the food reaches the colon, most of the fluid is absorbed, producing a semi-solid stool.

Diarrhoea occurs when the food residue passes through the colon too quickly or the fluid is not absorbed because of intestinal infection or any intestinal disease. Diarrhoea means frequent, watery bowel movements. Mild Diarrhoea is associated with passage of a few loose stools and severe Diarrhoea is associated with passage of profuse watery stools.

The different types of Diarrhoea :

Gastroenteritis : This is a watery Diarrhoea. It is usually caused by an intestinal infection which can be due to viruses or bacteria. Other causes include anxiety, medications and allergies. Gastroenteritis is dangerous mainly because it can lead to dehydration. Children with gastroenteritis often get dehydrated quickly because of loss of water from the body due to the Diarrhoea and vomiting. In addition, children with gastroenteritis reduce their intake of food and water due to the accompanying nausea and abdominal pain. Infants in particular tend to get dehydrated quickly.

Dysentery : This is the presence of blood and mucus in the stools. When the dysentery is caused by bacterial infection it is called a Bacillary Dysentery and when caused by amoeba is called Amoebic Dysentery.

Food Poisoning : When loose stools are triggered by ingestion of toxic foods, adulterated or over/ripe food.

Diarrhoea results in loss of nutrients and children often lose weight during an episode. It is commonly believed that food should not be given during Diarrhoea because it worsens the Diarrhoea. This is not true. "Starving" the

child or "giving rest to the intestine" are harmful practices.

Maintaining the nutrition in Diarrhoea is important.

The following guidelines can be followed:-

Breast Feeding: It must be continued.

Fresh Milk or Formula: Continue to offer milk. You need not dilute milk during a Diarrhoea episode. Milk may need to be diluted (e.g. 2 parts milk : 1 part water) only in cases where the Diarrhoea is prolonged and milk indigestion (lactose intolerance) is suspected to be the cause of it.

Soya Milk: Is given when Diarrhoea is prolonged (e.g. more than 7 days) as the child may be having "Lactose Intolerance". This is a condition where the child is not able to digest the sugar in the milk (i.e. lactose). Giving milk to these children worsens the condition. In such cases the child is put on a Soya Milk preparation.

Light Diet: Easily digested food should be offered to the baby; e.g. ripe banana, stewed apple/apple juice, arrowroot, kanji, rice, moong dal, khichdi, curd etc.

Heavy Diet: Avoid fried, oily, spicy or heavy foods like eggs etc till the loose stools have settled.

The most important treatment in gastroenteritis is DIET and ORF

Antibiotics are usually not required. Most cases of gastroenteritis settle without them. Antibiotics are given under the following circumstances:

- * **When there is Blood and Mucus in stool**
- * **Young infant,**
- * **Severe Infection: i.e. high fever, toxic look, severe purging etc**
- * **Stool exam shows many pus cells.**

Vomiting often complicates Diarrhoea, the

following strategies will help to control the vomiting and to prevent dehydration.

Drugs: Various medicines are given that control vomiting.

Small Feeds: This is crucial. When the stomach is irritated, it will not retain even a small amount of food if the child has not taken it willingly. Small frequent feeds are more likely to be retained. Sometimes even one teaspoon full food is sufficient at a time.

Frequent Feeds: Offering liquids frequently every few minutes is useful. Offer liquids every minute or two initially in small quantities. Once these are retained, you can increase the amounts.

Liquid Feeds: Liquids are better tolerated than solids. Start with clear liquids. Try Electrolyte Solutions or ORF.

Soft Diet: Once liquids are tolerated start with soft foods.

Stop Antibiotics: Occasionally the vomiting may be caused by the antibiotic, which is prescribed for the Diarrhoea.

Preventive steps for Diarrhoea :

- * Exclusive breast feeding for 6 months,
- * Delay weaning the baby in the monsoon,
- * Avoid Bottle feeds,
- * General Hygiene during preparation of foods is crucial.
- * Drinking Water should be boiled for 10-15 minutes. If it is not possible throughout the year, try to use boiled water at least in the monsoon. Infants must be offered only boiled water throughout the first year. Despite claims by water purifiers, boiled water remains the safest way to prevent water borne diseases.

For children, we recommend the BRAT diet: bananas, rice, applesauce, and toast.

To Contributors:-

Contributions to “Amrit Sanchar” are requested to be made in the following format.

- The article should be authentic & not published earlier.
- The contributed material should be related preferably to Ayurveda with new researches/theories.
- The main title, indicative of the content & references should be in brief.
- Article can be sent on CD with font & two printed hard copies or by e-mail to the editor.
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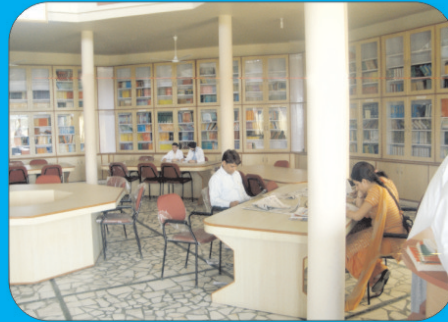
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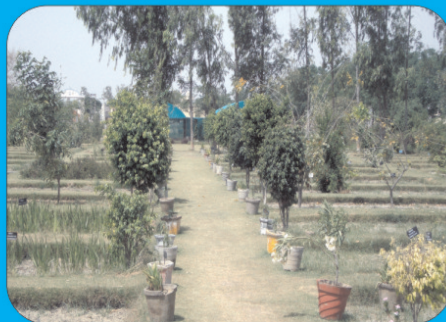
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