

AYURVEDA & HEART DISEASE

We are coming up with fourth issue of our Journal *Amrit Sanchar*. The credit for this goes to our esteemed contributors, our management, expert editors, our worthy Principal and all the co-editors teaching and non teaching staff of the college. We will continue to improve the quality and standard of the journal with active contribution from all important constituents of this endeavour. The ancient & Indian medical system of Ayurveda was well developed and akin to contemporary European medicine. This continued for almost two thousand years & the two systems progressed almost similarly. During the renaissance period there was a slowdown in the progress of Ayurvedic Medicine due to foreign invasions & government non sponsorship while there was tremendous development in the field of modern medicine due to development in Anatomy, Physiology, Physics and Chemistry. As a consequence the understanding of physiology of circulation and diseases affecting the heart and arteries was not a part of mainstream Indian medicine. Ayurvedic diagnostic methods of these diseases and treatment also did not progress as well as in conventional medicine. This tardiness can also be due to the reason that Atherosclerosis and coronary heart diseases were perhaps not so common in India up to the early twentieth century.

Whether ancient Indians knew of coronary heart disease is conjectural. Ancient Indian Physicians considered that disease occurrence resulted from an imbalance of three humors in the body (Vata-air, Pitta-bile, and Kapha-Phlegm) Circulatory system disorders were considered to be due to imbalance of vata or air and Kapha or Phlegm. Some recent authors have speculated that coronary heart disease was well known to ancient Indian sages and scholars and that Hritshool was the name given to Angina and description of character of Angina was well known. It has also been postulated that circulation of blood and heart as its principal reservoir and force was well known to Indian scientists much before the discoveries of William Harvey.

Stephen Hawking, the famous physicist in his observations, has concluded that a lot of reverse speculation has been done by modern scientists and philosophers, who have tried to find the current knowledge in ancient scriptures. I believe that the knowledge available in the ancient Indian scriptures should be analyzed keeping in consideration the time when these were written.

In Sushruta Samhita we get some description of chest pain. Sushruta describes that the mixture of Kapha and Vata is dangerous and can lead to mingled diseases including chest pain and paralysis. "When



Vayu is coupled with Pitta there is a burning feeling in one's limbs, they flail about and one feels exhausted, when the vyan vayu is covered by Kapha the symptoms are heaviness in chest and all limbs, Stiff bones and joints and paralysis." This description is closest, one can get to current definition of Angina and stroke.

The development of science of Ayurveda was a dynamic process till the middle of last millennium. Newer diseases, diagnostic methods and treatment modalities were included in successive compendia. This was similar to developments in European Medical Science. However Heart disease as a separate entity was not well described and no mention of typical angina pectoris was present. The development of Ayurveda slowed down after this time, possibly due to Islamic and European Invasions and Influences.

Current Scenario of Coronary Heart Disease in India

Cardiovascular diseases account for a large proportion of deaths and disabilities worldwide. Global Burden of Disease study 18, reported that in 1990 there were 5.2 million deaths from cardiovascular diseases in economically developed countries and 9.1 million deaths from the same causes in developing countries. More than 50% of these occurred in persons less than 70 years of age in developing countries as compared to only 25% in developed countries.

It has been predicted that by the year 2020 there will be an increase by almost 75% in the global cardiovascular disease burden. Almost all this increase will occur in developing countries. The situation in India is more alarming. In the Global Burden of Diseases study 17, it was reported that of a total of 9.4 million deaths in India in 1990, cardiovascular diseases caused 2.3 million deaths (25%). 1.2 Million death were due to coronary heart diseases and 0.5 million due to stroke. It has been predicted that by 2020 there would be a 111% increase in cardio-vascular deaths in India. The increase is much more than China 77% and 106% for other Asian Countries and 15% for economically developed countries.

Ayurveda in Modification of Coronary Risks.

Two basic tenets of Ayurveda-Life style changes and Herbal supplementation could be important and need major attention in reduction of coronary risk factors.

Ayurveda as well as modern medicine concur that there are things one can do every day to keep one's heart healthy. Some steps which will not only make our heart healthy but also transform our entire physiology are as follows. We can inculcate them slowly one by one in our life and lead a healthy life.

- 1. Eat Right :-** Arguably the most critical step one can take towards a healthy heart is to take a heart friendly diet. One should take more servings of fresh fruits and vegetables, start one's day with apples or pears, include soaked blanched almonds, dress the veggies with fresh lime juice and eat heart friendly spices like fresh ground black pepper and antioxidant power-spice turmeric. Choose fresh foods over processed foods and left overs, light goods over rich, deep-fried ones and warm cooked food over cold heavy foods.
- 2. Exercise moderately and regularly:-** We don't have to do a strenuous workout five times a week. The key is regularity. If we follow the Ayurvedic principle of Balardh i.e. exercising to half our capacity we can exercise every single day without straining our muscles. Walking is excellent exercise for everyone and excellent therapy as well. The early morning walk for thirty minutes is ideal. It will not only help our heart. It will also prepare us for the day by charging up our circulation and metabolism.
- 3. Balance the Ayurvedic factors :-** From the Ayurvedic perspective, the heart is the seat of pran i.e. life energy which is maintained by a delicate balance of Agni and Soma. To protect and nourish the physical heart and the emotional heart, it is essential to promote both soma & ojas. Ayurvedic drugs like Shatavri, Holybasil, Amla, Shilajit, Zinc Bhasm and Licorice promote ojus. Arjun, Mica Bhasam, Amla and Shatavari pacify Sadhak Pitta. Avlambak kapha is supported by Shilajit, Guggal, Zinc Bhasam, Alovera and Holybasil. The consumption of these medicines from different Ayurvedic preparations can go a long way in preventing and treating heart ailments.
- 4. Sooth away Stress :-** According to Ayurveda, a holistic approach to heart health requires us to nourish the emotional heart as well as the physical heart. Mental and emotional stress can disrupt the emotional heart. Practicing meditation techniques and Yoga once daily has been shown in various studies to help in lowering blood pressure, reversing arterial blockage and enhancing resistance to all types of stress.
- 5. Cultivate the Positive :-** While warding off excess stress is essential to prevent the emotional heart from wasting away, actively seeking mental and emotional well being can help the emotional heart flourish. Ayurveda stresses to perform activities to increase

Ojas by indulging in activities which give us contentment and happiness, listen to soothing or uplifting music, enjoy serene natural beauty, maintain a positive attitude, practice uplifting aroma therapy, sip relaxing herbal teas and walk away from situations that distress or anger us.

- 6. Cleanse Ama from the Physiology -** Arterial plaque is ama i.e. toxic matter that builds up in our blood vessels because our physiology cannot get rid of it efficiently, Ayurveda recommends the programme of eating ama free laghu sattvik Ahar and internal cleansing with Panch karma therapy every year to help our body flush out ama.
- 7. Get Proper Sleep :-** Ayurveda considers sleep (Nidra) as one of three upstambhas of life. Research studies have linked sleep deprivation to blood pressure problems, depression and other factors that increase the risk of heart diseases. We should practice good bed time habits by clearing distractions like television, computer and other work related materials from our bed rooms, maintain a temp. that is comfortable, wear comfortable organic cotton clothes, stay away from stimulants in the evening, go to bed by ten P.M. and wake-up early in the morning to keep us healthy and energetic throughout the day. The above mentioned steps can go a long way not only in primary prevention but can also help in secondary prevention and treatment of diseases of cardiovascular system.

Ayurvedic Remedies for Heart Diseases :- All the pharmacopias of Ayurveda contain large number of herbal preparations that can be safely and successfully used for the treatment of heart disease. Some important herbs effective for cardiac ailments are as follows :-

- 1. Terminalia Arjuna (Arjun):-** In different studies it has been found that it inhibits platelet aggregation, lowers serum cholesterol level in coronary artery disease patients, prolong prothrombin time, decreases blood pressure and heart rate and also possesses anti-arrhythmic activity. In addition to this it has been found to decrease obesity, blood glucose, increase HDL cholesterol and increase left ventricular ejection fraction. These properties make it an eminent cardio-protective drug in overall management of coronary artery disease.
- 2. Commiphora Mukul (Guggul) :-** The active alkaloid of Commiphora mukul is guggulsteron. It has a significant cholesterol and triglyceride reducing effect. It has been released for clinical use in India but is not very popular.
- 3. Allium Sativum (Garlic) :-** The description of benefits of Allium Sativum was first given in Vagbhata Samhita for its benefits in disease of digestive system, skin diseases, piles, urinary disorders, burns,

phlegm and wind. Recently it has been found to have fibrinolytic, antithrombotic, Antiplatelet, Hypolipidemic, hypoglycemic and anti oxidant properties.

4. Emblica officinalis (Amla) :- It is very rich in Vit-C which has antioxidant and hypolipidaemic property. It has been found to reduce total serum cholesterol, Aortic Cholesterol and hepatic cholesterol significantly. In addition to this it has cyto protective properties and is also useful in disorders of senile patients.

5. Ocimum Sanctum:- It has a transient hypotensive, negative inotropic and chronotropic effect. It also has an anti stress and lipid lowering activity. Anti inflammatory and antithrombotic properties of an alcoholic extract of leaves has been reported.

In addition to the above single herbal drugs some other herbs like *Centella asiatica*, *Convolvulus pluricalis*, *Inospora cordifolia*, *Withania somnifera* and *Zingiber officinalis* have also shown promising results and further research is required to ascertain the efficacy of these drugs.

Ayurvedic scholars from India and scientists from all over the world are working on different herbs and compound drugs to find some cheap & effective alternative for ever increasing patients of Heart Ailments. In India CCRAS has conducted research studies on IHD and congestive cardiac failure which has shown good results, the summary of these is as follows.

1. Guggulu- Guggulu as crude drug was administered in a dose of 12 to 16 gm/ day in patient suffering from lipid disorders, obesity, coronary heart disease and hemiplegia. At the end of three month there was an average fall of serum cholesterol 25.4%, Triglycerides 30%, Phospholipids 21.5% and serum free fatty acids. There was reduction in body weight, clinical relief of symptoms of hemiplegia and coronary heart disease, and overall a positive response in over 80% patients was observed.

2. Pushkar Guggal - In a dose of 8 to 10 gms /day for a period of three to six months was given to patients of pre-cordial pain, Dyspnoea and palpitation along with positive ECG findings for IHD. A considerable improvement was observed along with better biochemical parameters.

3. Karvira in congestive cardiac failure. The drug was administered in the form of tincture prepared from roots to patients of CHF, for 6 weeks, 90% patients showed relief and relapse was noted in about 20% of these patients.

As described above different Ayurvedic drugs have shown a lot of promise and further research is required to

substantiate the efficacy of these and other drugs to recommend them for general use.

Conclusion

There cannot be two kinds of medicines-conventional and alternative. There is only medicine that has been adequately tested and medicine that has not, medicine that works and medicine that may or may not work. Once a treatment has been tested rigorously, it no longer matters whether it was considered alternative at the outset. If it is found to be reasonably safe and effective, it will be accepted. But assertion, speculation and testimonials are no substitutes for evidence. Alternative treatment including Ayurveda should be subjected to scientific testing no less rigorously than that required for conventional treatment. A world-wide effort is going on in this direction but we as Ayurvedic fraternity have to take a lead and provide good, safe and effective medicines, for the benefit of mankind.

Dr. Sunil Joshi

Principal

Babe ke Ayurvedic Medical College & Hospital,
Daudhar (Mog) Pb.

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Preventive Care in Geriatrics

Prof. Y.K. Sharma

God's mystery behind birth, growth, procreation and decay followed by death of all living creatures has always been a question unanswered by philosophies of world. This stands true even for human race. The only relevant answer to this phenomenon is that, perhaps it is nature's agenda for evolution of species. Human race at present is at the top of evolutionary phenomenon with best physical and mental growth. Going by continuous urge to seek more comfort for its existence and prolongation of life by its innovative, special capacity of discoveries and inventions, humans have been successful in not only making their life very comfortable and disciplined but also long. But none of its efforts have so far been able to reveal the mystery of ageing and death or make life immortal. The most unprivileged stage of human life is old age which Hindu mythology has recognized as a "Dukh" or a state of continuous pain.

Ayurveda believes in Hindu mythological belief that one can live a healthy and productive life till the age of hundred years, provided one engages in healthy lifestyle and uses Rasayana drugs regularly, right from middle age. Ayurveda School of Medicine propagates that after 60 years of life one enters old age but gradually loses physical and mental abilities after that. Rasayana, the chapter in 'Charak Samhita' on use of specific formulations like Chavanprash, is one of the eight branches of Ashtang Ayurveda. This branch is of much interest to modern medical science when mission is to prolog life with productive health, especially in the field of geriatrics.

Last century has been the century of extensive research and advances in medical science. Surgery, antibiotics, immunizations and serums have given new dimensions to patient care resulting in improvement in average life of man. Improved hygiene and diet, better maternity and child health care have also contributed to this phenomenon. No doubt some developed countries have achieved average life span of 80 years of its citizens. India too has seen massive surge in average life span of its citizens during last century which has improved from 25 to above 60 years today over last 100 years. World population of the elderly is increasing and by the year 2050, adults older than 65 years will comprise 1/5th of the global population. In India 3.8% of the population is older than 65 years of age. According to an estimate, the likely number of elderly people in India by 2016 will be around 113 million.

A growing healthy population is a boon for nation as it adds to experience and productivity of a nation. On the other hand geriatric load of sick old people can seriously undermine the health and social structure of a society. In a country like India, with a population of over one billion, the situation can be grim if the geriatric ailments are to be cared by state health care system. With no health insurance and state policy of geriatric health care, the burden of geriatric care will become unbearable as our State hospital structure is already loaded with care of communicable as well as non-communicable ailments of people in productive years of their life. Further nuclear families, migration of young population to urban areas, poor health care and health promoting activities put the health of elderly people to increased risk. Lack of education and poverty make the fate of old even worse and reduce the chances of productivity and financial independency. There is thus high need that old persons are made aware of health promotion and maintenance routines so that their added years of life are really full of life pleasure and productivity. While there are needs for nutritional awareness and care, preventive care of each body system is desired for disease free old age.

1. Nutritional Care:

The nutritional requirements of old are different from that of a young person. They require a balanced diet with comparatively less calories which are uniformly distributed over the day. Five servings a day are ideal. Good quality proteins about 0.75 gm per Kg body weight are desired. About 20% of average 1000-1500 Kcal requirements should come from fat and rest from carbohydrates and proteins. Food should be calcium rich which can be provided through milk. Minerals and trace elements can be provided through fruits and soups. In non vegetarians, three servings of non vegetarian food a week are desired. Roughage should be part and parcel of diet of aged people to avoid constipation. Nuts especially almonds, walnuts, etc should also be given. Quality and quantity of food should not be compromised on account of poor denture. Old people should also be allowed to enjoy the taste of new and modern foods occasionally for a change and pleasure. Calcium, Vitamins especially vitamin E should be supplemented to delay bone and brain decay. Medhya rasayana of Ayurved like shankh-pushpi, brahmi, mandookparni should be used to prevent

***MD (Ay), Ph. D (Geriatrics) Professor and Head, Post Graduate Department of Kayachikitsa,
Rajiv Gandhi Govt., Post Graduate Ayurveda College, Paprola, (HP) - 176115***

memory loss. In extremely old patients, diet and food intake should be supervised. Skipping of food and fasting should be avoided.

2. Gastrointestinal Care:

Food intake is absolutely essential to sustain life. Gastrointestinal system helps in conversion of food into absorbable form for further use of all body tissues. That's why the care of this system is absolutely essential for maintenance of health of old. Common factors which are responsible for decreasing efficiency of this system in old are:

1. Poor denture
2. Reduced digestive functions
3. Poor gut absorption,
4. Intestinal dysmotility,
5. Lowered mucosal immunity barrier,
6. Poor pelvic floor strength,
7. Poor sphincter control, etc.

This commonly leads to ailments like; frequent indigestion, gaseous abdomen, constipation/stool impaction.

This can be avoided by improving denture, taking small frequent soft meals, soups, juice intake and by use of soft salads like pre-boiled salads. Use of appetite stimulants like Dadimashtak churna, Lavanbhasker churna can improve appetite. Similarly drugs like Hingvashtak churna, Lashunadi vati can control flatulence. For constipation, bulk purgatives like Isabgol Husk are good choice but drastic purgatives should be avoided. Rarely stools may get impacted or constipation of few days can be handled by glycerin enema or even finger evacuation can be done. Spicy, fried and constipation causing foods like low roughage foods, eggs, maida products, etc should be avoided. Excessive straining to pass stool may precipitate hernias and even cardiac or brain stroke.

3. Respiratory Care:

Common factors responsible for falling respiratory health are:

1. Fixed chest cage and increased residual lung volume.
2. Loss of ciliary mucosal clearance of respiratory tract.
3. Loss of mucosal protection.
4. Poor power of cough/expectoration.
5. Self induced and environmental pollution.
6. Confinement to bed.

These factors may lead to common ailments like dyspnoea on effort, cough/expectoration, frequent infections like bronchitis and pneumonias. The problem is worse in those who have been smoking or are/were exposed to dust or gaseous pollution. This is because such people are already suffering from diseases like chronic Bronchitis or/and Emphysema. To protect one's lungs till old age, it is essential to avoid smoking of any

nature. Regular Pranayamic breathing exercises not only keep lungs and breathing structures healthy but also provide better ventilation and thus better gas exchange. Episodic respiratory tract infections should not be ignored but promptly treated. Mucosa and moistness of the respiratory tract can be maintained by regular oleation of nostrils and steam inhalation. People who have bronchial asthma or have recovered from chronic lung ailments require special attention.

4. Neuro-Psychiatric Care:

Like other organ systems of body, there is regression in the functions and structures of brain. This is prime factor responsible for neuropsychiatric ailments. Besides reduced brain mass, nuclei degeneration, demyelination, senile changes in special senses, CVA, dementia, depression, ataxia, parkinsonism, insomnia etc. are major ailments which appear in old age. Impaired functions of higher senses like cataract, deafness, glaucoma, retinal degeneration etc., add to other woes in old age. There is progressive loss of memory, resulting in difficulties in performing day to day routines. Higher mental functions like insight, judgement, abstract reasoning, and emotions are also disturbed. Regression of brain functions also lead to poor coordination of motor activities, ataxias and tremors. Diseases like dementia and paralysis agitans are common. Higher sensory functions like sight, hearing, touch, taste and smell may also be impaired. Mental agility and neural health can be supported by nutritious food and stress free life. Isolation should be avoided and one should engage in literary pursuits to maintain learned behaviour. Company of people of same age group, caring family and spouse can also help. Medhya rasayana like Brahmi, Shankhpushpi, Jatamansi, Jyotishmati, can sustain memory and memory based functions of individuals. Use of Gingko-biloba and vitamin E is also advised. Religious pursuits also help in maintaining mental calmness and are stress busters hence are of immense value in old age.

5. Bone and Joint Care:

Disorders of bones and joints also make old age painful and sometimes seriously interfere in mobility. Common factors responsible are: Decreased bone mineral density, reduced muscle mass, power and tone, articular degeneration, physical inertia, etc. This is often associated with muscle wasting and poor nervous control over movements. Common ailments are; osteoarthritis/spondylosis, falls and fractures, etc. To keep bones and muscles in good shape, regular stretching exercises, yogic exercises, oil massage, regular walks are advised. Regular use of calcium in the form of shankha, praval, kapardika bhasmas along with anabolic rasayana like Ashwagandha is advised. To avoid falls, the gait should be supported by prosthesis or stick. Risk of fall on

account of poor vision, poor power of hearing, slippery floors, ill fitting shoes, uneven grounds, obstructions, stairs etc. should be carefully maneuvered.

6. Skin and Appendages:

With aging, skin also becomes lax and thin. Subcutaneous fat pad is lost. Other factors responsible for poor skin health are poor epithelial turnover, loss of sebaceous layer, loss of skin appendages like hair, nails, etc. This leads to common ailments like xerosis, atrophic dermatitis, frequent skin infections, senile purpura, etc. Pruritis is also a common complaint. Regular oil application on dry skin is desired. Mustard, coconut, sesame oil or cow's ghee or butter can be applied. Olive oil is also a preferred choice. To improve moisture of dry skin, sap of aloe vera is beneficial and should be applied. Food rich in vitamin D and A should be consumed and drug supplementation can be made.

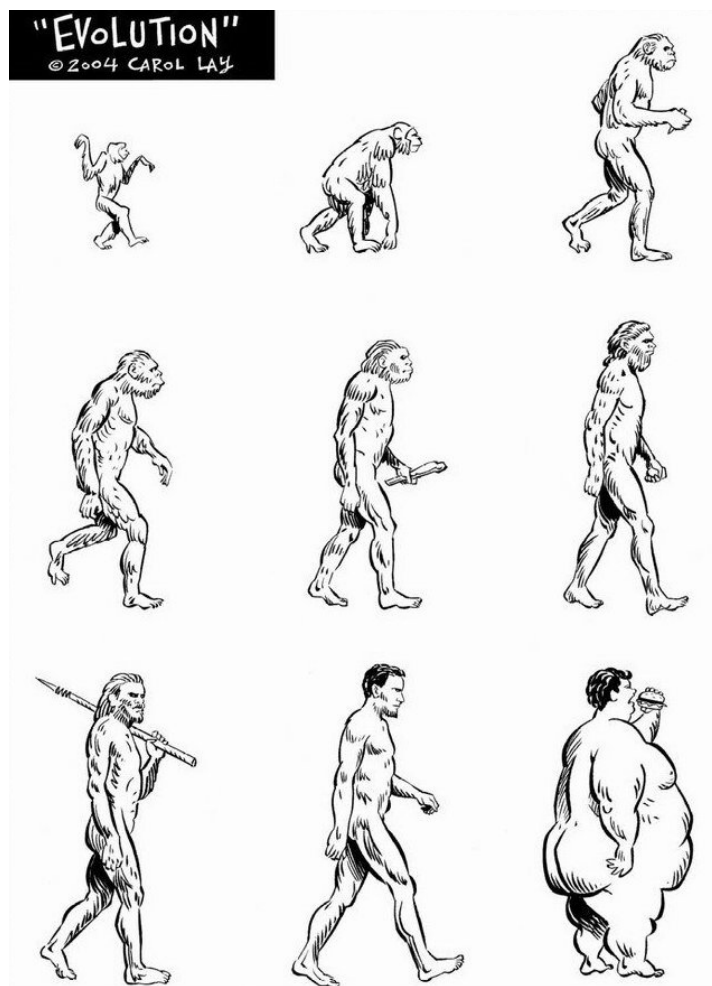
7. Urogenital Care:

Urogenital problems are also very common in old age. Common factors responsible for urinary problems are; poor concentration power of kidneys, poor detrusor function, poor mucosal barrier, BPH in males leading to complaints like increased urinary frequency, retention of urine, frequent urinary tract infections, incontinence, etc. Urogenital hygiene is of utmost importance. Where there is incontinence, adult diapers should be advised. Plenty of water during waking hours helps keeping urinary tract flushed and sterile. Common genital problem is loss of libido particularly in males and genital prolapses in females. Pelvic floor exercises can help control early prolapses. Surgical help may be required in others as well as BPH of males. Use of Varunadi kashaya, Trinpanchmool kashaya, Chandraprabha vati, Chandanasva, Shwetparpati, etc reduce urinary tract infections and improves tone of bladder muscles. Regular examination of internal genitalias is required for early detection of malignancies.

Important component of preventive care in geriatric these days is replacement therapy or physical therapy to restore the loss due to disability of original structure. This may include implantation of intra ocular lens in cataract, hearing aid in deafness, artificial denture in denture loss, knee and joint replacement with prosthesis, etc. Though they do not lead to complete restoration of natural functions but still they improve functional working capacity of individual. More and more development in science shall provide many such replacements to make geriatric stage of life comfortable. But as far as metabolic and neuropsychiatric ailments are concerned, the help from experts and other help groups is always desired. A continuous watch should be kept on ailments,

which if left unchecked or untreated will have a potential to make old age painful. This includes diabetes mellitus, hypertension, obesity, precancerous stages, Alzheimer's disease, etc. They should be detected early and treated before they take roots in body in the form of complications.

Ayurveda has always considered old age as a natural phenomenon. Chronic ailments make it lifeless. Healthy old man while being productive can also enjoy this phase of life where he cherishes living with second generation siblings. Family care provides excellent space for aging. Still open life in villages, stress free environment, regular physical activity and walk and talk in company of geriatric age group with proportionate education makes life satisfying. With definite purpose of life and routine of day, assurance of spiritual and social health, medical care at hand, assurance of terminal care if required, make all days of older people purposeful.



Glimpses, Shortcomings, Contributions and Future Perspectives of Ayurvedic System of Medicine

Dr. A. K. Pandey

Abstract: Ayurveda is one of the most prosperous heritages of Indian health tradition. The word Ayurveda literally means the science of life and science of longevity. This meaning itself indicates its greatness. It is longest unbroken health tradition in the world and enjoyed unquestioned patronage in the past. It has its glorious past during 1000 BC - 1000 AD. Due to foreign invasions (1200 AD to 1800 AD) its growth was stunted and derailed. In this period, many Ayurvedic texts and Ayurvedic intellectuals were taken away to other countries to strengthen their science. At present, more than 70% of Indian population believes on its remedial measures. However, its low cost, easy accessibility to poor and uneducated communities make it imperative to modernize Ayurveda in the light of advances in bioscience and biomedicine and incorporate some of its validated and tested ideas into primary health care and modern medical practice for the benefit of society.

Introduction

Ayurveda is a highly evolved system of medicine resting on proven theories and well documented clinical observations with unbroken and successfully continuing clinical practice. Ayurveda has its roots in the Vedas, which are considered the oldest written literature in the world and from which many theories and philosophies have sprung. Despite these, proper recognition and appreciation have been denied for Ayurveda. The systematized science of Ayurveda has resulted from the amalgamation and practical application of various schools of Darshanas. The Darshanas forming the basis of Ayurveda are- Vaisesika, Nyaya, Mimamsa, Sankhya, Yoga and Vedanta. These form the logical and philosophical schools of thought of ancient India resulting from the efforts of its sages in trying to understand the ultimate nature of reality. All these form the basic science that has given rise to the theoretical framework of Ayurveda and under which Ayurveda has put together an enormous body of observational data and has developed its own methodologies to understand the human body and also diagnose and treat the ailments. The history and development of Ayurveda is closely interwoven with the history and culture of this country. In India Ayurvedic thoughts and methods have had a very deep impact on the lifestyle of the people. The system of Indian medicine i.e. Ayurveda, is still used by 70% of population. In the past, the research design for clinical trials was mostly based on its multifaceted components, holistic approach for the benefit of society. While single drug-single disease oriented intervention models have been used in modern medicine. It is now widely accepted that research model of modern medicine are insufficient to test holistic systems of medicine like Ayurveda. For the betterment of Ayurveda, a new holistic model of Ayurvedic clinical research is needed and to be developed for this purpose. Hence, come forward with sincerity, objectivity and

rigor, use the tools and methods provided by current scientific advances. This is the time for all of us to contribute in Ayurveda which is more productive, meaningful and beneficial for the society.

Ayurvedic Evolution

In the era of Aryans tribes, the medical men took full pockets of medicinal herbs during movement, which is clearly mentioned in Rig Veda. They amputated the seriously wounded and infected, treated the stump and made artificial eyes and prosthesis. Soma used to control pain and snakebites and it was a wonder drug at that time. The opening of the bladder with a sharp instrument is clearly mentioned.

- 5000 - 2500 BC** - Vedic Period Oral and poetic tradition, divine origin.
- 2000 - 1500 BC** - Vedas were written versions mentioning drugs and diseases.
- 1500 - 1800 BC** - Agnivesha Tantra, Charaka Samhita, Sushruta Tantra, Sushruta Samhita were written.
- 800 BC - 800 AD** - Golden Period of Ayurveda.
- 1000 AD - 1945 AD** - Dark Period of Decline, due to foreign invasion.
- >1950** - Revival

The Atharva Veda had provided the structural foundation for Ayurveda. The earliest Ayurvedic texts were documented in the form of simple Sutras in Sanskrit and were beyond the reach of common person. The symptoms of fever, malaria, dysentery, typhoid, cholera, plague, leprosy and smallpox were described. These diseases are still prevalent in India except the last one. The Atharva Veda gave accurate and detailed description of rheumatoid arthritis, gout, epilepsy, blindness, abscess, tumors, bronchitis, delirium, jaundice, neuralgia,

*Asst. Professor, Department of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences,
Banaras Hindu University, Varanasi - 221005*

migraine, several skin diseases, elephantiasis etc. Water in the abdominal cavity meant dropsy, but the link between cardiac troubles and edema as well as dropsy was not mentioned by the Ayurvedic doctors. Religious prayers, sacrifices, offerings, exorcism, fasting and bloodletting were the standard cures for most of the illnesses with some 290 herbal preparations. Soma (a kind of wine) and Kushta were used for pain control as anesthetic agents. The classical treatise of Ayurveda is Charaka Samhita, which opens with a meeting of the sages in the Himalayas. It was probably the World's first medical congress. The aim of this congress was to find out solutions of human sufferings and diseases. Bhardawaja on behalf of the congress sought the knowledge of Ayurveda from the Lord Indra somewhere in the Himalayas. He then passed on this knowledge to Atreya, a practicing physician. Atreya organized satellite symposium in different parts of India and taught and trained six more disciples, who compiled his teachings in the so-called Charaka Samhitas. Ashtanga Ayurveda is the outcome of Charaka Samhita and it was spread into 120 chapters as an internal medicine. Sushruta Samhita dealing with surgery was the second treatise to enrich Ayurveda. Dhanwantary learnt surgery from the God Indra and founded a school of surgery in Banaras (Varanasi) and taught it to his student Sushruta. The contents are divided into 6 volumes with a total of 186 chapters dealing with surgery, ENT (Ear, Nose and Throat), and ophthalmology. The first definite date in Indian history is 326 BC, when Alexander crossed the river Indus. Ayurvedic physicians had treated his army. The invasion by Alexander had no impact on the cultural, scientific or medical practices of Indian civilization. The spread of Buddhism from India to its neighboring countries must have exposed Indian monks to other civilizations. The Arabic medicine came in contact with Ayurveda through invaders and traders from 6th century AD. The Arab rulers of Baghdad from 753-803 AD had invited several Ayurvedic scholars to their court. They were honored and rewarded for translating Ayurvedic texts into Arabic or Persian and setting up hospitals. This period is considered as the golden period of Ayurveda. Because many commentaries, diagnostic books, pharmaceutical books, Ashtanga Samgraha & Hridaya came in front of medical world. Nagarjuna wrote his critical monograph on the two Samhitas, another physician of the same name used metals like mercury, sulfur, gold, and silver in therapy and introduced a unique detoxifying process to convert metals for use in his patients. In the medieval period (from 1000-1800AD) the growth of Ayurveda was stunted and derailed due to foreign invasions. It were the Mughals who provided a brief stability and revival of Ayurvedic medicine. In this period, all patronage of Indian arts or Ayurveda was withdrawn. Sanskrit became less familiar and was relegated to a classical language. Ayurveda suffered the

same fate. Ayurveda went underground, lost contact with its roots, was taken over by quacks and it became a close family secret. It remained mostly in the books and nothing new was added and lost any chance of development until after India's independence from British rule. In spite of independence after 24 years Ayurveda got official recognition in the year 1970 only, after passing a CCIM bill in Loka Sabha and by virtue of these efforts CCIM act came in force in the year 1971, which regulates the functioning of Ayurveda and other traditional systems of medicine.

Fundamentals of Ayurvedic Medicine

Ayu: consists - Mind, body, senses and soul.

Agni (Biofire): 20 in numbers i.e. 1-Jatharagni- GI biofire, 7-Dhatvagni- Tissue biofire, 5- Bhootagni- Cellular biofire and 7 Pachakansha- Essence of GI biofire along with 80 different Variants of Agni.

Doshas (Bio-humor): 3- Vata, Pitta and Kapha.

Tridoshas (Bio-humors) their functions and Disease:

- Vata - Movements in regards with sensory and motor activities
- Pitta - Energy and Metabolism
- Kapha - Synthesis, Growth and Development

Dhatu: 7- Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra.

Panchamahabhuta: 5 elements earth, fire, air, water and ether (space) on the logic of Pinda & Brahmanda.

Jnanendriya (Sense organ): 5-ears, nose, eyes, skin and tongue.

Karmendriya (Motor part): 5- upper extremities lower extremities, Anus, Penile part and Speech.

Disease: Outcome of Doshic imbalance. The diseases can be due to exogenous (accidental) or endogenous (constitutional) factors. Dietary overindulgence and irregular or faulty dietary habits or faulty lifestyle are the main causes of disease. Imbalance in the three Doshas results in diseases, which can be recognized by a variety of signs and symptoms.

Diagnosis: In Ayurveda all the clinical symptoms are directly linked to the Dosha/Doshas, which have gone out of balance and it is directly related to the known causative factors responsible for this imbalance. Other factors such as Prakriti, age, occupation, season, region etc also play an important role in the diagnosis of disease. On other hand, Dashvidha Rogi Pariksha (ten fold examination of patient) and Ashtavidha Roga Pariksha (eight fold examination of disease) are the backbone of Ayurvedic diagnostic, which can be assessed by Darshana, Sparshana, and Prashana on the background of Aptopadesha, Pratyaksha, Anumana and Yukti.

Correlation of Ayurveda with Modern Biomedical Science :

Sankhya Sidhanta Pancha mahabhutas Prakriti Dosha-Dhatu-Mala Rasa Veerya Bhaishajya Anubhava Chikitsa Nidarshana Pathyapathya Ahara Pramana Mana	Cosmogogenesis Physics Genomics Systems Biology Gustatory Science Bioenergetics Epidemiology Drug discovery Sciences Nutritional Biochemistry Quantitative biostatistics	Ayu Ontology Ayu Mechanics Ayu Genomics Ayu Biology Ayu Cybernetics Ayu Dynamics Ayurvedic Pharmaco-epidemiology Reverse Pharmacology Ayu Nutraceuticals Ayurvedic biostatistics
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Treatment: Treatment objective is to restore the balance of Doshas and removal of the causative factors. The third type of disease is caused by abnormal mental reactions like rage, greed, envy and grief. for this, Ayurvedic medicines are categorised according to their action on either one or two or all the three Doshas. Drug therapy is not recommended for diseases caused by abnormal mental reactions. It was mentioned that mental diseases be treated by proper education, counseling and family support. Yoga, Meditation, Diet, Massage, Herbal Drugs, Life styles, and Fasting, could restore balance of the Doshas. Drugs were divided into several ways based on their origin from plant, animal or mineral source, physiochemical properties like appearance, color or taste or by the disease. The actions of the drugs depend on the patient's constitution, diet, age, metabolism, mind and resistance; cause, stage and severity of the disease and the strength or dose of the drug, time of administration and its method of preparation. Topical, oral, inhalation and suppository routes are used to administer drugs. The intravenous route was not known or used in Ayurvedic system of medicine. There is some reference to testing of drugs on pets and worms. The need for dose adjustments based on patient's weight, age, diet, digestion, compatibility, constitution, stage and severity of disease and time and season is emphasized.

Decline and Shortcomings of Ayurvedic

1. A closed system of learning, did not take up ideas from other systems of medicine due to pride of their race and divine origin.
2. Students were asked to blindly follow their teacher and never challenge his teachings. Similarly, the mistakes made earlier, about the human anatomy or physiology were not corrected in due time. Thus scientific methods of observation and deduction were lost.
3. Original texts were written in Pre-Sanskrit grammar style, now forgotten.
4. Lack of proper anatomical and physiological

knowledge.

5. Explanation for origin or proof of concepts are still awaited.
6. No objective way to measure Doshas.
7. Put over emphasis on classification and nomenclature of diseases and Drugs formulations.
8. Foreign invasions of India and resulting wiping out of Indian intellectuals and science.
9. Medicine progresses by documenting and learning from mistakes. It must have happened during Medieval period.
10. Lack of high quality pharmaceutical standards to assure consistent quality of preparations.
11. Lack of toxicology and pre-clinical pharmacology data.
12. Lack of data about rigorous proof of safety and efficacy based on modern standards of clinical trial.
13. Lack of suitable analgesic, antibiotics agents etc.

**Ayurvedic Contribution to the Western Medical World
Medicinal plants:-**

Reserpine, anti-diabetic, hepato-protective, lipid lowering, memory enhancers, health promoters, psoralens in psoriasis, tylophora alkaloids in allergy, antiamoebiasis, forskolin neem as antiviral, antifungal, hypoglycemics and skin diseases.

Surgery

Dissection, plastic surgery, experimental surgery, Cesarean, steam bath, bladder stones, amputation, cataract, artificial eyes and limbs.

Concepts

Mind-body interaction, Yoga & meditation, aging, hospitals pattern, training and certification, alcoholism, poisons & their management, symptoms and etiology of diseases.

Future Perspective of Ayurveda

- Objective to measure Panchamahabhoota, Doshas, Dhatus and Malas and or proof of their existence.

- Explanation for origin or proof of its concept.
- Judicious interaction with conventional biomedical science.
- Transliteration of Ayurvedic texts with meaningful efforts.
- Incorporate full knowledge of anatomy and physiology.
- Provide data about rigorous proof of safety and efficacy, which is based on standards of clinical trials.
- Provide high quality pharmaceutical standards to ensure consistent quality of preparations.
- Ability to match dramatic outcomes with antibiotics, antiulcer agents etc.
- Provide skilful, trained and qualified manpower in the society.
- Provide teaching hospital and research activities to the youngsters of Ayurveda.
- Proper integration and linkage to Modern Technology.
- Participation of Ayurveda at National Health Programme and National health forum.
- Active Communication with WHO, UN, NHRC, IUCN along with other institutes.

Conclusion

No doubt that western modern medicine is very successful in dealing with medical emergencies and treating certain diseases, it is now faced with a situation where diseases are no more single entities but are complex, with one leading to another. The reductionistic approach of conventional medicine and its belief in linear causality faces limitations. The emergence of drug resistance in micro organisms, unexpected adverse drugs reactions, drug failure, emergence of new killer micro organisms like Ebola, Lhassa, revival of plague, resurgence of malaria, tuberculosis, cholera, subsequent withdrawal of several high profile drugs, overuse of pesticides and fertilizers is leading to a counter current movement like return to nature or return to the roots. The rising cost of health care is driving it out of the reach of the most vulnerable sections of society like the poor, elderly, children and women. On other hand, health and illness are more holistically understood in the conceptual framework of Ayurveda, which differs in fundamental ways with the tenets of modern medicine. There is a need to conduct globally acceptable clinical research in Ayurvedic therapeutics and to establish reasonable safety and adverse event profile of Ayurvedic therapy. A recent survey found wide range of clinical and in vivo studies for many of the plant-based therapies utilized in the Ayurvedic system.

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Socio-pharmacological aspects in Ayurved Tradition

Dr. Amit Tarafdar, MD

Ayurveda, which literally translated means "the science or knowledge of life" is the traditional medical system of India. Its origin dates back an estimated 5-10,000 years, and it is extensively considered to be the oldest form of health care in the world. It is understood by most scholars that, as knowledge of Ayurveda spread out from India, it influenced the ancient Chinese system of medicine, Unani medicine, and the Humoral medicine practiced by Hippocrates in Greece. For this reason, Ayurveda is often referred to as the "Mother of all healing." The knowledge of Ayurveda has its written genesis in the Vedas, the sacred texts of India, supposed to be the oldest writings in the world. The Vedas cover a vast number of subjects from grammar to health care. The Vedas were written approximately 2500 BC or earlier. Current knowledge about Ayurveda is mostly drawn from relatively later writings, primarily the Caraka Samhita (approximately 1 500BC), the Sushrut Samhita (300 - 400AD) and the Ashtang Hrdayam (approximately 500 AD). These three classics describe the basic principles and theories from which Ayurveda has evolved. They also contain vast clinical information on the management of a multitude of diseases. Later writings and research expand on this early clinical information. Ayurveda is based on the principle that disease is the natural end result of living out of synchronization with our environment. Natural is an important word because Ayurveda understands that symptoms of disease are the body's normal way of communicating disharmony. With this understanding of disease, Ayurveda's approach to healing becomes obvious: to reestablish harmony between self and environment. Once reestablished, the need for the body to converse disharmony diminishes, symptoms dissipate, and healing is said to have occurred. Ayurveda understands each person and the disease the person is manifesting as a unique object. It could be said that no two people are alike, and no two diseases are alike. Therefore, Ayurveda does not approach the cure of a disease as much as it approaches the cure of a person. This approach vastly differs from allopathic medicine. Where allopathic medicine looks for a drug that will cure a statistically significant number of people for a specific condition, such as rheumatoid arthritis, Ayurvedic medicine looks for a treatment that will cure an individual person of their unique presentation of the disease. Since no disease

affects two people in exactly the same way, no two cures are exactly the similar.

Therapeutic Principles

For the Ayurvedic practitioner, it is necessary to recognize the nature of the patient, the nature of the disease, and the nature of the remedy. Only then will a physician be able to provide the utmost care. The qualities of Nature are said to be either heavy or light, cold or hot, stable or mobile, sharp or dull, moist or dry, subtle or gross, dense or flowing, soft or hard, smooth or rough and cloudy or clear. A person, a disease or a remedy is understood to have a unique amalgamation of these qualities. It is the goal of the Ayurvedic practitioner to understand as many of the qualities as they can about their patient and their patient's condition. A person may be heavy or light, move quickly or slowly, feel more warm or cool, have a sharp or dull mind, have moist or dry skin. These are examples of understanding the nature of a person. Similarly, a disease like arthritis may be defined as producing sharp or dull pain, migrating (mobile) or localized to one or more joints (stable), producing vasodilatation around the joint (warm), or vascular constriction (cool). By understanding the presentation of a disease through its qualities, the uniqueness of a disease is understood. Herbal remedies are also understood in terms of their qualities. Substances that are nourishing are described as being heavy, such as yasthimadhu (licorice). Substances that are depleting are light, such as guggulu (C. mukul). Some herbs create warmth in the body, such as shunthi (ginger), and others cool the body, such as vasa (A. vasica). The fundamental principle of treatment in Ayurveda is to treat the disease with the qualities opposite to its nature. Cold diseases are treated with warm remedies; heavy diseases are treated with light remedies, and so on. Ayurveda describes the human being as being composed of five elements, three doshas (biological energies), seven dhatus (tissues), and numerous srotas (channels). The five elements are ether, air, fire, water, and earth. These five elements, which also make up all of environment, are not meant to be taken literally. They are ideas described as elements. They are the ideas of space, motion, heat, flow, and solidity correspondingly. They have the qualities as noted above. The three doshas, the biological forces that govern the functions of the body, are composed of these elements.

*Lecturer, J.B. Roy State Ayurvedic Medical College & Hospital,
Kolkata - 700 004*

Vata dosha is a biological force which governs all motion in the body. Composed of ether and air, it is light, dry, mobile, and cool. People with a predominance of this energy in their bodies tend to exhibit these characteristics. They tend to be thin, have dry skin, feel cold easily, and move and speak quickly. They also tend to have a greater amount of arctic feeling, such as anxiety and fear. Vata dosha imbalance can affect any system of the body and cause an increase in those qualities. For instance, the respiratory system becomes dry as seen in dry asthma and non-productive coughs. The digestive system becomes dry and constipated, an abnormality of motion. Dryness may precipitate stone formation in the kidneys or gall bladder, and an increase in the motile quality of vata in the nervous system is understood to cause hyper-excitability. The cold nature of vata can become severely disturbed and cause Raynaud's syndrome. Wasting conditions are viewed as an increase in the light quality of vata. Therefore, anywhere in the body where there is an increase in the qualities of vata, there will be physiological disturbance. Pitta dosha is an energy which governs all digestion in the body. Composed primarily of fire, it is hot, light, exhibits flow, and is sharp. It contains a little water, and thus it is neither very moist or dry. People with a predominance of pitta in their bodies exhibit these qualities. They feel warm and are less affected by cold weather. They have a pinkish complexion, are moderate and reasonably steady in their weight, have a mesomorphic body build, and can have a sharp and intense personality. This personality tends to be challenged by a greater amount of heated emotion such as anger, resentment, and jealousy. As pitta governs digestion, the digestive system tends to be strong. There is little trouble digesting food. Bowel movements occur frequently, 2-3 times per day. Pitta dosha imbalance can affect any system in the body but is predisposed to affect systems that are said to contain a lot of fire. When pitta affects a system, usually greater heat builds at that location. The liver, small intestine, blood, skin, and eyes are systems in which pitta exerts a great influence. Hepatitis, hyperacidity, acne and conjunctivitis are examples of heated pitta conditions in these regions of the body. Pitta disturbance can affect any system. Infections anywhere in the body producing heat and fever are understood as pitta disturbances. Kapha dosha is a biological energy which governs growth in the body. Composed of water and earth, it is heavy, moist, stable, soft, and dull. People with a predominance of kapha in their bodies tend to carry more weight, have thicker, denser bones and skin, and have a more traditional endomorphic body build. They also tend to have moist supple skin and full, thick hair. This person's personality tends toward being relaxed and not easily disturbed. They talk and move slowly. They can be challenged by heavy

feelings, such as lethargy and rigidity. When kapha increases in the body, there is a greater production of mucous which, like kapha, is heavy, thick, and moist. There may also be swelling and weight gain. While kapha can affect any system of the body, the stomach and lungs are the most susceptible. It is here that we see several common signs of kapha disturbance--nausea, limited appetite and mucous formation. Conditions such as obesity, some cancers, chronic bronchitis, lung congestion, and fluid retention syndromes have a kapha disturbance as a component of the pathophysiology. While the doshas are seen as the causative agents of disease, dhatus, upadhatu, and srotas are understood to be the site of the disease. Dhatus are tissues, upadhatu are additional tissues, and srotas are channel systems. There are seven tissues; plasma, blood, muscle, fat, bone, marrow, and reproductive tissue. Unlike Western medicine, which understands each tissue to be separate, Ayurveda understands each to be dependent upon the tissues preceding it for its nourishment and health. Hence, a problem which develops in one tissue, if not corrected, will eventually have systemic consequences. Pathology in Ayurveda can be partially understood in terms of what dosha is affecting what dhatu. When vata enters a dhatu, that dhatu becomes lighter, drier, and hyper-mobile. When pitta enters, it becomes heated, and when kapha enters, it becomes heavier, moister, and more stable. In a muscle, vata disturbance causes wasting and atrophy, pitta disturbance causes infection and inflammation, and kapha disturbance causes excessive growth. Srotas are channel systems similar to the organ systems of the human body. The major srotas are somewhat equivalent to the respiratory system, digestive system, reproductive system, cardiovascular system, urinary system, and water metabolism system. These are additional sites of disease where doshas may become aggravated. During the metabolic processes of the body, Ayurveda recognizes that metabolic waste is produced and must be properly eliminated to maintain optimal health. Waste materials are called malas. Obstruction to their removal is another causative factor in disease.

According to Ayurveda, each person has a constitution that was determined at conception. This constitution is the inherent balance of these three doshas. The constitution determines a person's basic body type and personality. While other factors influence the formation of both the body and personality, the constitution provides the predisposition in much the same way as a person's genetics. It is a common misconception that Ayurveda groups people according to three types. In actuality, there are infinite combinations and permutations of these three basic energies in each person. Therefore, we see that each person is understood to be unique. The Ayurvedic

practitioner's first objective is to understand the nature or constitution of the patient. This tells the practitioner who they are treating. Next the practitioner attempts to understand the disease or the nature of the imbalance. Ayurvedic pathology is understood according to the doshic imbalance and the imbalance of qualities within the body. The practitioner assesses the state of the doshas, dhatus, upadhatus, srotas, and malas of the body. The overall strength of the body is an important factor in future treatment and is assessed as well. The term ojas is applied to the strength of the body, although more accurately it is that which gives the body the ability to endure stress. While pathology is important to understanding the nature of the disease, equally important is etiology. Etiology is understood according to how the patient's lifestyle, habits, and environment caused the doshas to become disturbed. A lifestyle which emphasizes a fast pace, changes of job or relationship, travel, fast foods, and dry, light foods, such as a vegetarian diet, is likely to cause an aggravation to vata dosha. A lifestyle which is intense, competitive, highly focused, and which emphasizes spicy hot foods is likely to aggravate pitta. Kapha is aggravated by a sedentary lifestyle and a diet of heavy, moist foods, such as milk, banana and meat.

Understanding the nature of the person and the nature of the disease, the practitioner can now design a treatment program to guide the patient back into balance. This program utilizes what is commonly called five sense therapies as its foundation, along with specialized treatments for the mind and bodily purification and rejuvenation.

Using the sense of taste, the practitioner is able to prescribe a diet consisting of the opposite qualities of the disease or imbalance. This diet is very specific and describes the exact foods in each category a patient may consume. This includes specific meats, dairy, nuts, vegetables, etc. In addition, the practitioner recommends herbs that work along similar principles. In addition to the effects that herbs have on the energetics and qualities of the body, Ayurveda recognizes that some herbs also possess the capability to have strong effects on specific organs and symptoms. This fact is taken into consideration in the design of the formulations. Using the sense of vision, color therapies may be incorporated or utilized. Colors are understood to possess the same qualities as all of Nature and, again, colors are prescribed that have the opposite qualities of the disease. Colors can have strong special effects on specific diseases, and this is recognized and considered in designing a treatment. The ears provide a vehicle for treatment using sound therapies. Ayurveda has

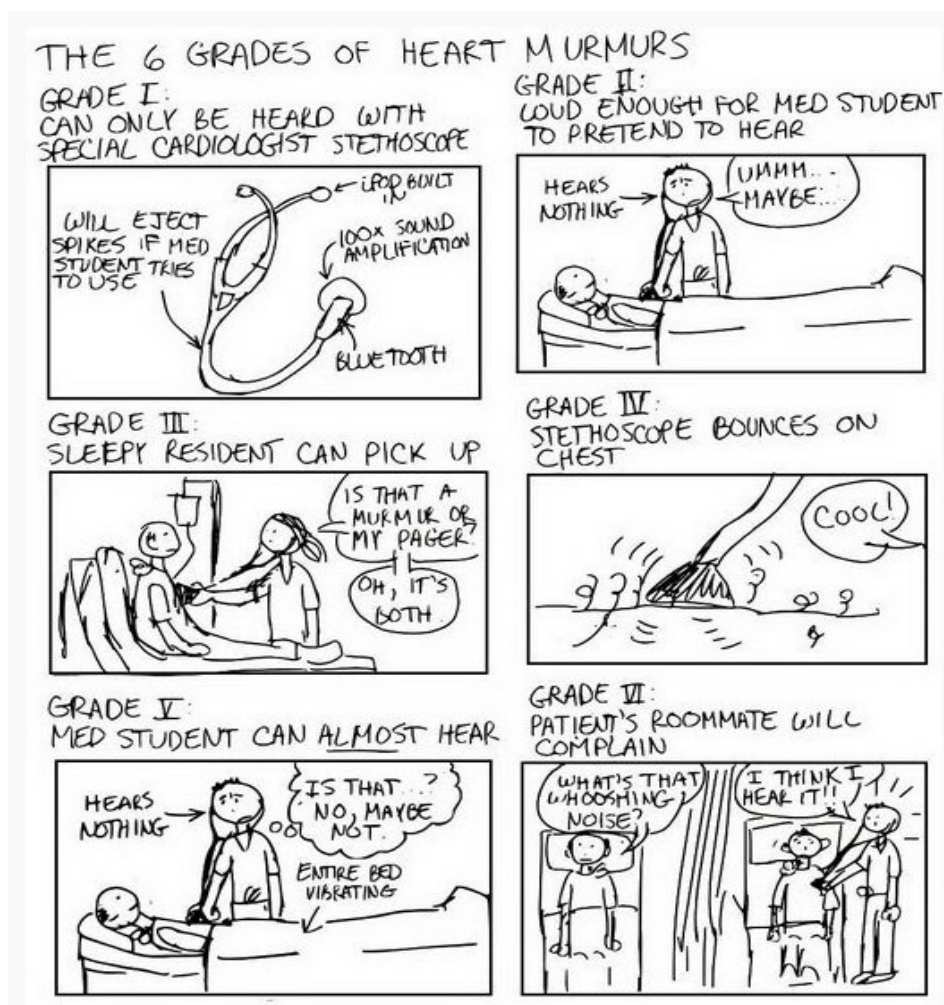
traditionally utilized sound energies called mantras for healing. Different sounds affect the doshas in different ways. These sound energies are understood to stimulate specific organs and endocrine glands, possibly affecting hormonal production. Aroma therapy provides treatment through the sense of smell. The qualities of a smell have different effects upon the doshas and may be used in ayurvedic treatment plan. For example, sweet-smelling fragrances increase kapha but bring balance to vata and pitta. Through the skin, the application of specific oils and massage are utilized. Different strokes and pressures affect the doshas in different ways. The patient may be told to apply massage to him/her self or massage may be applied by the therapists. For the treatment of the mind, Ayurveda merges with its sister science from India, yoga. By using yoga and meditation, the patient is encouraged to adopt a lifestyle emphasizing peace of mind. The resultant stress reduction is an understood component of the healing process.

Ayurveda also emphasises the importance of keeping the body clean and pure. Toxins, both external and intrinsic to the body, interfere with the flow of waste material out of the cells resulting in impaired function. To remove these toxins, Ayurveda employs a technique known as Pancha Karma, meaning "the five actions." This is a program performed for 7-28 days at a specialized center that utilizes a restricted diet, massage therapies, additional medicated oil therapies, medicated steam therapies, and elimination therapies such as enemas, therapeutic vomiting, purgation, and nasal/sinus cleansing with special oils snorted into the nasal passages and blood letting with leeches. In addition to these physical modalities, the patient retreats from the world and enjoys time for meditation and relaxation. While each therapy is understood to be important, Ayurveda emphasizes lifestyle analysis and change as the most significant aspect of the healing process. The practitioner helps a patient understand how lifestyle has contributed to the origin of the present condition and offers support as the patient attempts to create a new lifestyle in greater harmony with their constitution. After evaluating the patient properly, the Ayurvedic practitioner designs a program utilizing the therapies noted above.

Ayurveda is a complete medical science which should be considered whenever allopathic medicine is unable to produce the desired results. As Ayurveda includes protocols for the care of every system of the body, it can play a role in the management of any case. It is being used most on patients with chronic and sub-acute disease. Ayurvedic lifestyle therapies may also be utilized effectively to enhance wellness and prevent

disease. Research in Ayurveda has centered around the pharmacological use of Indian herbs. In the botanical and Ayurvedic medicine journals, literature detailing herb constituents, actions, indications, and contraindications is abundant. Successful treatment of a multitude of diseases using herbs are well documented. Clinical evidence suggests that there are few harmful side effects from Ayurvedic treatment, and this is supported by 5000 years of subjective evidence. The actions of most herbs and the cross-reactions of herbs and drugs have not been studied in great detail. History suggests few harmful interactions and most herbs are safe in the hands of a qualified practitioner. Practitioners are educated regarding which herbs and procedures are to be avoided by pregnant and lactating woman. Research journals contain the latest information on the actions, effects and side effects of many ayurvedic drugs. A patient who visits an Ayurvedic practitioner should expect to receive an evaluation consisting of a minimum of a history of the chief complaint, past medical history, a review of systems, and

a review of any medications, herbs and vitamins the patient may be taking. Observations are made of the shape of the face, size of the neck, size and depth of the eyes, color, quantity and quality of hair, thickness of the skin and width of the bones. Detailed examination procedures include the pulse and the tongue. Examination of the abdomen and the taking of vital signs completes the evaluation. After the examination, the practitioner spends time educating the patient about their findings. During this report of findings, the practitioner educates the patient about doshas and their imbalances. In Ayurveda it is said that it is more important what the patient knows than what the doctor knows. A patient should leave with a clear understanding of their path back to health. Follow-up visits are scheduled to support patients as they make progress and confront challenges. Follow-up visits include ongoing counseling and education. Additional therapies are integrated into the program slowly, over time, as the patient strives to create a lifestyle of harmony through the five senses.



RASA THERAPY - A PANACEA OR POISON OF MODERN ERA?

Dr. Meghna Vaidya. M.D.

The limitations of western drugs in improving body resistance and curing metabolic disorders provide sufficient impetus to review our ancient wisdom and knowledge to find alternative solutions to combat the growing incidence of deadly diseases of present world. At the same time *Ayurvedic* pharmaceuticals are receiving a new thrust through reappraisal of *Bhasma* preparations as noble nano-technological applications. Therapeutic uses of *Rasa dravyas* are being explored in terms of metallo-pharmaceuticals of contemporary researches which is evident by increasing number of researches validating it.

Ayurveda is a distinct and well developed field of therapeutic science that harmonizes human dependence on nature and vice versa. *Rasa* Therapy i.e. *Vedic* Iatrochemistry is one of the most unique therapies developed as an offshoot of *Ayurveda* around the medieval period when herbal medicines alone were found to be less effective in curing various diseases. Ever since *Rasa* therapy has been widely used to cure ailing humanity.

Rasa Shastra, as a whole, deals with two concepts i.e. to transform base metals into noble metals called *Lauhvada* or Alchemy and to maintain body tissues in fresh and healthy state by strengthening them called *Dehavada* or Iatrochemistry. These two phases of Alchemical practice, the metallurgical and the physio-religious one were superimposed to serve the purpose of removing poverty, senility, for purifying the body, rejuvenating it and taking it to an imperishable and immortal state with the help of mercury and its elixirs. *Rasa* Therapy stresses on the mercurial elixirs so that one can achieve the best quality of *Rasadi dhatus* which in turn provide positive health to the body and sustain it always in healthy and youthful state.

The word '*Rasa*' in *Rasa chikitsa* indicates mercury and its compounds but besides mercury *Rasa chikitsa* also makes use of various other metals and minerals which play specific role in different biological systems. Any imbalance therein leads to disturbed body metabolism.

Safety Issues Regarding Rasaushadhis

Considering the present scenario, these are the testing times for *Ayurvedic* medicines as safety issues are being raised against metallic preparations of *Ayurveda* due to their heavy metal content which is

nothing more than a misconception. There is a layman tendency unsupported by facts to assume that all the so called heavy metals and their compounds have ecotoxic properties. There is no basis in chemical and toxicological data. All toxins have a safe threshold below which there is no toxicity. There are various opinions on what the maximum safe daily limits for heavy metals in dietary supplements should be. Safety limits recommended by Food and Agricultural organization (FAO)/WHO joint expert committee permits total dietary intake of 250µg/day for lead and 50µg/day for mercury for a 70 kg adult. Heavy metals in general may be defined as metals having specific gravity more than that of water. *Bhasmas* prepared from these metals become lighter than water and therefore float on the surface of water (*varitara*). Governing council for *Ayurveda* in India i.e. CCRAS has also conducted short term and long term toxicity studies on various *Rasaushadhis* which prove that the amount of metal/mineral in *Rasaushadhis* is within permissible limit and these are completely safe in therapeutic doses for internal use. Further if these medicines were fatal or unsafe, it would have been evident in thousands of years of their use. But actually the findings are totally different as *Rasaushadhis* prepared through S.O.Ps are being used as wonderful life saving drugs for thousands of years without any noticed adverse effects. Also the adverse effects of ill formed drugs are well documented in ancient *Ayurvedic texts* and an *Ayurvedic* physician is well versed with it exactly as in all other medical systems including modern medicine. So use of metals and poisons in *Rasaushadhis* should not sound scary because their benefits outweigh their adverse effects if any.

In this concern it is noteworthy that any metallic medicine used in *Ayurveda* passes through extensive processing and testing before it is declared fit for internal use. Although ancient methods of processing and testing sound outdated and unscientific but they stand on firm grounds of chemical principles.

Mode of Action of Rasaushadhis

The metallic/mineral components of *Ayurvedic* medicines undergo different procedures such as *shodhana*, *marana* and *amritikaran* during preparation. These processes convert metallic components into non toxic organo-metallic compounds. In most of the *rasa*

Lecturer, Department of Rasa Shastra & Bhaishjya Kalpna,

Babe Ke Ayurvedic Medical College & Hospital, VPO. Daudhar, Distt. Moga (Punjab)

formulations organo-metallic and herbal constituents are mixed together. Both these constituents have synergistic activity i.e. metallic constituents enhance the absorption and metabolism of herbal ingredients and vice versa. As a result the efficacy of the herbomineral compound is enhanced inspite of administration of lower doses of medicine. The lighter form of metal contained in organometallic compound has ability to carry the organic component e.g. herbs, faster to the desired site and start the action immediately. These non-toxic organometallic compounds act as *Yogvahi* (carrier) thus increasing the bio-availability of drug to the cells.

Concept of Nanotechnology and Rasaushadhis

Nanoparticle is defined as a particle having size of 10^{-9} meters. Nanotechnology is the understanding and control of matter at dimensions between approximately 1 and 100 nanometers where unique phenomenon enable novel applications. With the advancement of technology and introduction of nano particle concept in drug delivery, *Bhasmas* are being regarded as the most ancient form of nano medicine. Various researches conducted by IIT Bombay, IIT Roorkee and other institutes around the globe have proved that *Bhasmas* prepared through classical methods as mentioned in *Ayurvedic* texts, have particle size ranging between 1-100 nanometers. *Rasaushadhis* (organo-metallic formulations of *Ayurveda*) consisting of metal or mineral *Bhasmas* as an ingredient are considered as superior form of drug administration. It is observed that the nanomedical applications of various drugs are proportionate to their particle size and shapes. The surface area of nanoparticle is much higher than a large piece of same material. This allows for more interaction and contact with anything, it is around. Smaller is the particle size, quicker is the internalization and its consequent effects. Physical as well as chemical properties of a substance change with change in its size and shape. A recent research has shown that Gold changes its colour depending on its size. As a large bar of gold it is golden yellow in colour. As size is decreased, it becomes blue, purple and at extremely small size it is red. It is clearly evident from this research that in *Rasa* therapy we use gold in nanoparticle size since ancient times, as Gold *Bhasma* which we use for medicinal purpose is red in colour (*Swarnachampakvarnabham*). Another study shows that a large piece of silver metal is used for jewellery or welding. However, when it is reduced to nano particle size, it becomes extremely antibacterial. Interaction of nanoparticles with biological systems is one of the most intriguing areas of research. Recently Transmission Electron Microscopy and Atomic Force Microscopy are being used to demonstrate the typical features of *Ayurvedic* metallic medicines. Analgesic, anti-inflammatory, immunomodulatory activity, antioxidant activity, free radical scavenging

activities of various *Bhasmas* have been identified and nanotechnology is being claimed to be responsible for all these properties due to target oriented technology.

Conclusion

Rasaushadhis offer advantages over herbal medicines by virtue of their high potency, stability over a longer period, lower dosage, easy storability and sustained availability. Further the safety studies which have been carried out by CCRAS put to rest the concerns about the presence of heavy metals in *Ayurvedic* medicines and are definitely an assurance to the patients as well as medical fraternity that they are making right choice by using *Rasa* therapy. It is clearly evident that it is not the *Rasaushadhis* but manufacturing units, doctors or patients using medicine irrationally who are at fault. It is high time that we should recognize and support the need for effective quality control in the manufacturing of all *Ayurvedic* products and promote their rational use. It can now be concluded that *Rasaushadhis*, if prepared by following the SOP's and guidelines recommended by CCRAS will surely be a panacea for ailing humanity.

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Ayurvedic Basic Theory Of Applied Oncology

Dr. Arghya Mukherjee (MD)

Introduction

A neoplasm is an abnormal mass of tissue, the growth of which exceeds and is uncoordinated with that of the normal tissue and persists in the same excessive manner after cessation of the stimuli which evoked the change¹. In 2007, approximately 1.4445 million new cases of invasive cancer were diagnosed and 559650 persons died of cancer. The most significant risk factor for cancer overall is age; two-third of all cases were in those over age 65 years. Interval between ages 60 and 79, 1 in 3 men and 1 in 5 women in life time develop cancer. Cancer is the second leading cause of death behind heart disease. Lung cancer is the most common cause of cancer death in the world. Breast cancer is the second most common cancer world wide; however it ranks fifth behind lung, stomach, liver and colorectal cancer². It is estimated that there are approximately 2-2.5 million cases of cancer in India at any given point of time, with around 7-9 lakh new cases being detected each year. Nearly half of these cases die each year³. There is an increase of around 19 percent in incidence and 18 percent in mortality since 1990⁴.

Ayurveda is the science of life and longevity originated in India 3000 years ago. The basic principles of Ayurveda are mainly based on observational documentation of Ayurvedic scholars through ages. Many common concepts of Ayurveda are being proved experimentally by Modern scientist. Examination of Prakriti⁵ done in Ayurvedic clinical method attains special importance in the age of genomics. Ayurvedic concept of natural immunity (swavab-uparamvada)⁶ is well accepted by modern Immunology. Though there was no microscope in the old age, Ayurvedic scholars also focussed on the existence of microorganism. Role of microorganism in the causation of malignancy are documented in Ayurvedic texts⁷. Modern microbiology makes an immense advancement in the recent age. But still we can not reject Ayurvedic basic principles. Cause of disease (Nidan) and pathogenesis of disease (samprapti) is vividly described for all the diseases of Ayurveda. Modern science is still searching for particular molecule that causes the disease. It is very wise to analyse the Ayurvedic theory of disease pathology in modern day light. Concept of Srota i.e channel and Agni which is responsible for metabolism are basic to disease manifestation according to Ayurveda. A thorough study on Ayurvedic concepts in relation to Genetics,

Immunology, Microbiology, identification of carcinogenesis and metabolic condition is very important to modern oncology.

Concept of Prakriti and Genetics.

Genetic influences on malignancy have long been suspected. For example, retinoblastoma occurs in children of the same parents. Mongols are more likely to develop cancer (leukaemia) than normal children. There is probably a complex interrelationship between hereditary susceptibility and environmental carcinogenic stimuli in the causation of a number of cancers⁸. Neoplasia is usually associated with somatic mutations induced by physical and chemical damage to the DNA. The observations have indicated the correlation of specific chromosomal alterations with particular type of cancer⁹. The transfer of the neoplastic phenotype between organisms took place by means of oncogenic viruses. This recognized that most chemical and physical carcinogen are also potent mutagens¹⁰.

The association of increased cancer incidence with occupational exposure to a variety of chemical and physical agents, including high energy electromagnetic energy (gamma irradiation and X-rays), radium in watch painters, radon related products in miners and benzene or vinyl chloride in chemical workers proves the role of carcinogen¹¹. Both classes of cancer genes encode proteins that regulate transduction of growth and differential signal within a cell¹². The genotype can significantly influence the likelihood of developing environmentally induced cancers¹³.

Many different oncogenic retroviruses were subsequently discovered in a variety of species, and each of these viruses was observed to induce a characteristic type of tumor (such as fibrosarcomas, myeloblastomas, osteosarcomas). These observations also indicated that oncogenic retro viruses one or more "transforming" genes, or oncogenes, capable of inducing the neoplastic phenotype in stably infected host cells. In addition several classes of DNA viruses including papovaviruses, and herpes viruses can induce neoplastic transformation in vitro and to a lesser degree in vivo¹⁴.

According to Ayurvedic genetic consideration there are seven types of prakriti based on predominance of three Dosa (i.e Vata, Pitta, Kapha). In a clinical study it has been observed that Kapha prakriti individuals are more prone to different type of cancer than Pitta prakriti.

Lecturer, Department of Kayachikitsa,

Babe Ke Ayurvedic Medical College & Hospital, VPO. Daudhar, Distt. Moga (Pb.)

None are available in vata prakriti in this study. Vata people are more prone to bone cancer, pitta prakriti people are more prone to blood cancer and kapha people are prone to cancer of muscle and fatty tissue¹⁵. Every person should take appropriate diet according to prakriti to keep away from diseases.

Concept of Immunology and Bala

From an immunologic perspective, cancer cells can be viewed as altered self cells that have escaped normal growth-regulating mechanism¹⁶. Various chemical agents (e.g. DNA alkylating reagents) and physical agents (e.g. ultraviolet light and ionizing radiation) that cause mutations have been shown to induce transformation. Induction of malignant transformation with chemical or physical carcinogens appears to involve multi steps and at least two distinct phases: initiation and promotion. Initiation involves changes in the genome but does not, in itself, lead to malignant transformation. After initiation, promoters stimulate cell division and lead to malignant transformation¹⁷. Oncogenes and tumor suppressor genes have been shown to play an important role in this process, by regulating either cellular proliferation or cell death. Mutation or genetic rearrangements of proto oncogenes by carcinogens or viruses might alter the normally regulated function of the genes, converting them into potent cancer-causing oncogene¹⁸. Two types of tumor antigens have been identified on tumor cells: tumor-specific transplantation antigens (TSTAs) and tumor associated transplantation antigens (TATAs). They may result from mutation in tumor cells that generate altered cellular proteins. Tumor-specific antigens have been identified on tumors induced with chemical or physical carcinogens and on some virally induced tumors.

When the same chemical carcinogen induces two separate tumors at different sites in the same animal, the tumor antigens are distinct and the immune response to one tumor does not protect against the other tumor¹⁹. Oncofetal tumor antigens, as the name implies, are found not only on cancerous cells but also on normal fetal cells. These antigens appear early in embryonic development before the immune system acquires immune-competence; if these antigens appear later on cancer cells, they are recognized as non-self and induce an immunological response. Two well-studied oncofetal antigens are alpha-fetoprotein (AFP) and carcinoembryonic antigen (CEA)²⁰. Human breast cancer cells exhibit elevated expression of the oncogene encoded Neu protein, a growth factor receptor, whereas normal adult cells express only trace amount of Neu proteins. Because of this difference in the Neu level, anti-Neu monoclonal antibodies can recognize and selectively eliminate breast cancer cells without damaging normal cells²¹.

Future of Research in Cancer Immunology-

Future strategies for vaccination against cancer are the identification of significant tumor antigens by genetic or biochemical approaches; the development of strategies for the effective presentation of tumor antigens; and the generation of activated population of helper or cytotoxic T cells²². Ayurveda stresses on the natural immunity. According to Ayurvedic immunological theory (Swavab-uparamvada) the dhatus (body essence) of the body gets into disequilibrium due to imbalance of the cause and they enjoy equilibrium when the cause is in balance. Their termination is always natural. There is always a cause in production of beings but none in their annihilation though some regard non-initiation of cause as the cause in the latter case²³. Some drugs mentioned in Ayurveda shows important role in immunomodulation. The steroidal component of the root of *Withania somnifera* (Ashwagandha) showed antitumor activity²⁴. Withaferin A and Withanolide E exhibited specific immunosuppressive effect on human B and T lymphocytes and on mice thymocytes. Withanolide E had specific effect on T-lymphocytes²⁵. It is observed that concentrates of Aloe vera are able to stimulate the production of T4 lymphocytes. It does exert an effect upon monocyte macrophage vis a vis formation of T-lymphocyte. Clinical studies exhibit the increase in the T4 lymphocyte. Its administration for 4 months showed a significant decrease in "Kaposi sarcoma". This may be due to the production of the T4 lymphocytes and subsequent production of cytokines, the anti-tumor activity was enhanced²⁶. Chemoprevention is a relatively new concept. It involves the use of natural agents to reverse, suppress or prevent carcinogenesis before the development of invasive malignancy. The purificatory treatment regimen of Ayurveda followed by the regular use of Rasayan may prove an effective mode of chemoprevention²⁷. In view of oncology the Ayurvedic concept of "Rasayan"²⁸ stands for keeping away from the carcinogen, deactivating the carcinogens and activating our immune system. Drug mentioned in this respect like *Tinospora cordifolia* (Guduchi) shows immunomodulatory effect²⁹. When there is excessive growth at a particular site (eka desh vridhi), there must be some deficit on other part of the body (Anyas thana kshaya). This is the general concept of Ayurveda. In Cancer Eka desh vridhi is indicated by tumor growth and Anyas thana kshaya is denoted by loss of body weight³⁰. Symptoms of Kshaya are observed in malignancy. There are eighteen types of kshaya in our body. Mainly Dhatu kshaya of rakta, manasa (mainly), meda, asthi, majja and oja are clinically observed in cancer patient³¹. The symptoms of different types of malignancies are similar to Ayurvedic disease like raktapitta and pandu (leukaemia), sannipataja gulma (abdominal cancer), arbud (abnormal growth) and Kshata-kshina (lung cancer).

There are four types of Nidan(etiology). They are Sannikrishta, Viprakrishta, Vyabhichari and Pradhanic.

Sannikrishta (Direct cause)- Smoking , alcohol abuse , oral tobacco abuse are included under Sannikrista nidan. For example, Smokers have a 33% lifetime risk of dying prematurely from a tobacco-related cancer, cardiovascular, or pulmonary disease. Lung cancer and cancers of the , oropharynx, oesophagus, kidney, bladder, pancreas, and stomach are all tobacco related^{33a} There is higher incidence of cancers of upper aerodigestive tract in chronic alcoholics^{33b}

Viprakrishta (Indirect cause)- External Environmental pollution and internal cause like obesity are regarded as Viprakrishta nidan. Obesity increases risk of cancer of the colon, breast (female postmenopausal), kidney(renal cell), endometrium, and oesophagus,relative risk of colon cancer are increased in obesity by 1.5-2 for men and 1.2-1.5 for women. Obese postmenopausal women have a 30-50% increased risk of breast cancer. A hypothesis for the association is that adipose tissue serves as a depot for aromatase that facilitates estrogen production. Adiposity is also associated with poorer survival and increased risk of recurrence after treatment³⁴. In Ayurveda Atisthul persons are described as disease- prone³⁵.

Vyabhichari (Weak cause) Disturbance of Bala(i.e immunity of the person) is the Vyabhichari Nidan. This is of three types sahaja bala (innate immunity), kalaja bala (seasonal immunity) and Yukti krita bala (induced immunity).

Pradhanic (Main cause)- Life style against Prakriti (expression of oncogene) is the Pradhanic cause of malignancy. Recent oncogene and oncogene-suppression gene theory support the fact .If we take appropriate diet and exercise according to our Prakriti, there is least chance of alteration of our body physiology.

From the above discussion it is clear that we should always keep alert of the carcinogen that enters into our body in the form of food, drink and diet. As a civic is cautious in the duties of the city and a charioteer in those of the chariot, a wise person should be cautious in duties relating to his own body³⁶. This is the main theme of preventive oncology in the Ayurvedic medical science. If we adopt good life style and proper diet according to Ayurvedic basic principle, we can attain a life long prevention against malignancy. I want to conclude that Ayurvedic basic theory is very much related to modern applied oncology. We have to explore the concepts of Prakriti (genetics), Bala (immunology), krimi (microbiological concept) and nidan of disease

(identification of carcinogen). Constant thinking and research in these subjects leads to the pathway of new "Ayurvedic Oncology".

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Therapeutic Uses of Triphala in Geriatric Diseases

Dr. Mradu Gupta (Ph. D., M.D.)

Abstract

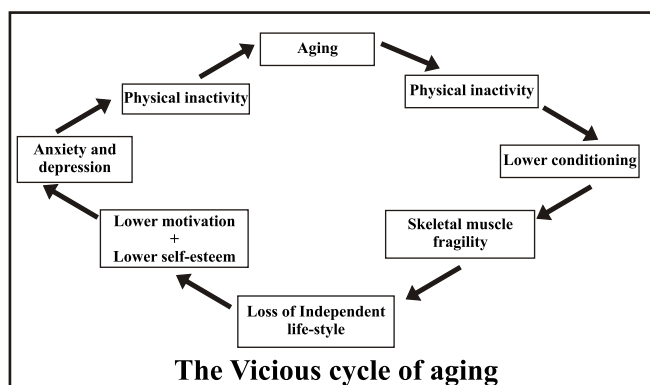
Degenerative physiological changes related to old-age are increasing world over. These geriatric diseases affect almost all vital body systems. The rejuvenating and preventive therapy called Rasayana therapy in Ayurvedic system of Indian medicine deals with prevention, amelioration and cure of geriatric ailments by increasing overall body immunity, fighting infections & antigens, and preventing carcinogenic mutations. A specific polyherbal preparation called Triphala, which consists of equal amounts of fruits of three plants namely Terminalia chebula Retz., Terminalia bellirica Roxb. and Emblica officinalis Gaertn. in fine powder form, has been specifically mentioned in traditional Ayurvedic texts for its beneficial effects in geriatric diseases. It contains tannins, phenols and glycosides which are responsible for its strong antioxidant activity apart from its immunomodulatory, anti-inflammatory, analgesic and antimutagenic properties. These attributes make Triphala an effective remedy for geriatric degenerative diseases.

Globally, a significant increase in life expectancy has been observed. The combination of low fertility and declining mortality rates has resulted in large and rapid increases in the elderly population. The proportion of the elderly in the world population is expected to increase rapidly from 10.0% in 2000 to 15.0% in 2025 and 21.1% in 2050. The growth in the ageing population in India has been faster than in other developing countries. The absolute number of the elderly in India is projected to reach 137 million by the year 2021, a drastic increase from 81 million in 2002. Ageing puts an increased burden on the social, economic, and health care demands of any country. A challenge to ensuring the quality of life of the ageing population is double burden of diseases and disability, especially in developing countries. These countries still struggle with infectious diseases and malnutrition along with the recent, rapid growth of non-communicable diseases such as diabetes, cardiovascular diseases and hypertension, as well as disability caused by age-related changes in physical health, including mobility and ability to perform activities of daily living¹.

Physiological Changes Related to Ageing

It has been reported that between the age of 25 and 65, the total body water can decrease by 15-20% and the extra cellular fluid by approximately 35-40%.; however, the fat weight to body weight ratio increases by 25- 45%. These changes in the body compartment with advancing age can affect pharmacokinetic parameters. The entire gastrointestinal tract undergoes changes caused by the effect of ageing. With advancing age there is frequent loss of teeth, and such loss of teeth seems to cause a reduction in salivary flow. There is also a significant reduction in salivary ptyalin content and the absorbing capacity of the oral mucosa with advancing age. With advancing age cardiac output diminishes, which alters blood distribution to various organs; in order to

distribute blood effectively in the presence of diminishing cardiac output, the brain, heart and skeletal muscles preferentially receive more of the diminished cardiac output than do the liver and kidney. Both structure and function of the liver are affected by the ageing process. Since the liver has the highest capacity to metabolize drugs for their elimination from the body, any dysfunction of this vital organ during the ageing process is expected to prolong their half-life. Therefore, the enzymatic activities of the enzymes may decrease during the ageing process because of the gradual death of hepatocytes and reduced blood flow to this organ. The age induced loss of hepatocytes is compensated for by an increased activity of the surviving cells. An age related deterioration of renal function occurs because the kidney loses 20% of its weight. The weight loss involves a gradual reduction in the number of nephrons due to decreased renal blood flow per unit tissue mass.



The most common physiological changes which take place in the human body with ageing can, therefore, be summarized as follows:

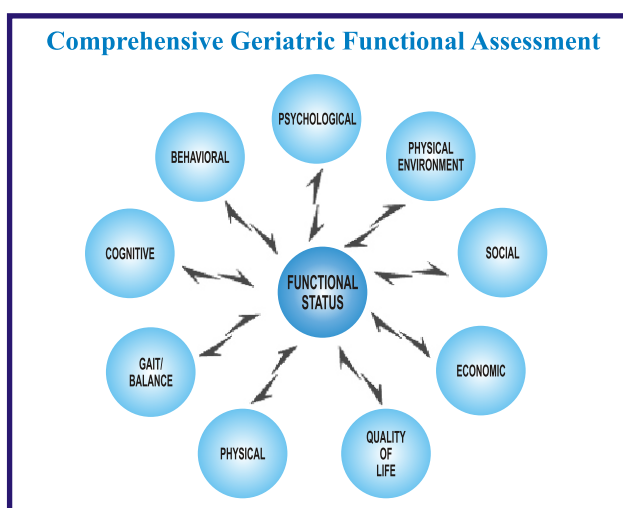
- a. Nervous system: neuronal loss, impairment of memory, hearing and vision/sense of balance.
- b. Respiratory system: reduced lung elasticity, chronic

**Reader, Department of Dravyaguna,*

Institute of Post Graduate Ayurvedic Education & Research, At S.V.S.P. Kolkata - 700009

bronchitis, emphysema, recurrent respiratory infections.

- c. Cardiovascular system: reduced myocytes, dilated aorta, narrowed coronaries, ischemic heart disease, cardiomyopathy.
- d. Digestive system: degenerative changes in inner lining, reduced digestive capacity, dyspepsia, chronic constipation, heartburn.
- e. Renal system: progressive loss of nephrons, reduced glomerular filtration rate, rising creatinine.
- f. Endocrine system: reduced sensitivity to insulin, glucose intolerance, overt diabetes.
- g. Skeletal system: reduced bone mineral density, osteoporosis, fractures on minor trauma, degenerative arthritis & loco motor disability.



Rasayana Therapy: An Ayurvedic Approach for Geriatric Problems

Most of the drugs used today are obtained from natural sources or semi synthetic derivatives of natural products as mentioned and used in the traditional systems of medicine. Hence, it is a logical approach for drug discovery to screen traditional natural products instead of randomly synthesized chemical compounds. This methodology was put into medicinal practice by the Indian scholars of the ancient era whose dedicated efforts gave birth to the Ayurvedic system of medicine. The Ayurvedic system is based upon the Dosh (metabolic factors), Dhātu (constitution, body tissue) and Mala (excretory matters) factors which are found in equilibrium in the healthy person but any disturbance occurring in their composition produces diseases. These factors depend upon the food habits, daily routine, work environment and life style of the individual personality. If any changes occur in these factors which increase or decrease the amount of any of the three triads of life Vata (nervous activities), Pitta (digestion and metabolism) or Kapha (stability and immunity), it may lead to disease. The inadequate digestion of food due to

improper food and irregular routine produces undigested food particles which are circulated throughout the various body parts. These can obstruct the various body channels and produce disease due to malnutrition of specific body parts.

Rejuvenating and preventive therapy called Rasayana therapy has been used since ancient times to provide vital capacity and long life of specific body parts by using appropriate medicines and balanced diet. The word Rasayana can be related to the modern word Geriatric which is closely linked with the Sanskrit word Geeryadi, which means degenerative changes in old age linked to diseases such as hypertension, diabetes mellitus, osteoporosis, metabolic diseases, mental diseases, cancer, etc. Rasayana refers to substances that stimulate the production of the subtle essence of the immune system (Ojas) due to complete digestion of the food. Low levels of these essences make the immune system weak which facilitates the development of chronic and degenerative diseases. Rasayana Therapy arrests aging, enhances intelligence, memory, strength, youth, lustre, sweetness of voice and vigor. It is supposed to nourish blood, lymph, flesh, adipose tissue and semen and thus prevent degenerative changes and illness. It improves the overall metabolic process and builds natural resistance against infection^{2,3}. There are many types of rasayana and many herbs have been mentioned according to their role in preventing degenerative changes in the specific organ systems.

Ingredients of Triphala and its Ayurvedic properties

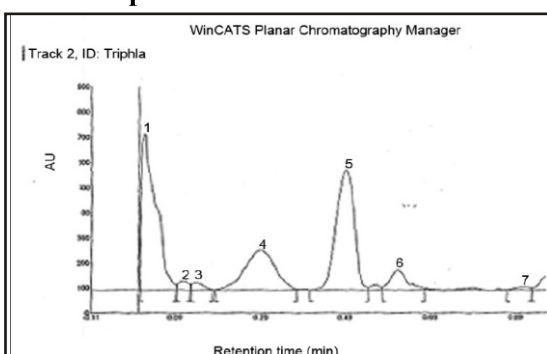


Dry samples of Triphala

The drug Triphala is a combination of the fruits of Haritaki (*Terminalia chebula* Retz.), Vibhitak (*Terminalia bellirica* Roxb.) and Amalaki (*Emblica officinalis* Gaertn.) in equal amounts in fine powder form. Here one fruit of *Terminalia chebula*, two fruits of *Terminalia bellirica* and four fruits of *Emblica officinalis* are used for the preparation of medicine. *Terminalia chebula* and *Terminalia bellirica* have a warm

energy, while Emblica officinalis is cool in nature. Triphala, being a combination of all three, is therefore balanced, making it useful as an internal cleansing, detoxifying formula for everyone. Triphala is regarded as an important *rasayana* and good purgative in Ayurvedic medicine. Recipe for this traditional herbal supplement is described in the traditional Indian texts, the Charak Samhita and Susruta Samhita which date back to 1500 B.C. Triphala is considered a 'tridoshic rasayan' having balancing and rejuvenating effects on the three constitutional elements that govern human life: Vata which regulates the nervous system, Pitta which maintains metabolic processes, and Kapha which supports structural integrity.

Chemical Composition



HPTLC profile of Triphala with Phenolic compounds

The common chemical compounds on review present in this drug are Tannin, Gallic acid, Chebulagic acid, Ellagic acid, Phenols and Glycosides. Phenolic acids, flavonoids and tannins are the most commonly found polyphenolic compounds in plant extracts. The total Phenolic content in Triphala using spectrophotometric methods has been evaluated and the phytochemical analysis showed that Triphala is rich in phenols/polyphenols (38.3%) and tannins (35.73%), while flavonoids were found to be absent.

Pharmacological Activities-

Its purgative action is due to the presence of Chebulagic acid and its antioxidant, immunomodulatory, anti-inflammatory, analgesic and anti-ageing , antioxidant, anticancer ,antimicrobial, action is due to the presence of Phenolic-glycoside compounds and tannin.

Conclusion

Many scientific studies have indicated that an association exists between inadequate antioxidant status and increased risk for or poor outcome of several age-related diseases, including Alzheimer's Disease, stroke, Cardio Vascular disorders, osteoporosis, cancer, osteoarthritis, degenerative diseases of the eye, and

peripheral arterial disease^{28, 29, 30}. The strong antioxidant properties of Triphala combined with its analgesic, antipyretic, chemo preventive, antidiabetic, antimutagenic and wound healing properties play a very important role in the prevention, interception and repair of the effects of many of these age-related diseases. Therefore, the drug Triphala can be used for both preventive and curative purposes in the management of many common geriatric diseases very effectively because of the abovementioned pharmacological and therapeutic properties. In fact, it has been traditionally used for these purposes since ancient times in the Ayurvedic system of medicine.

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Discussion on Jara Janya Chitta Abasad (Geriatric Depression)

Dr. B.C. Jana

What is Geriatric Psychiatry?

Geriatric Psychiatry is an area of specialization in Geriatric Medicine that deals with mental life, behavior, and neuro psychiatric disorders in elderly. The principal mental disorders of elderly are mood disorders (depression) and dementia.

Why Geriatric Psychiatry?

It is probably due to three reasons viz, increased elderly population globally, increased prevalence of mental disorders in elderly, and special health care need in elderly.

What is Psychiatry in Ayurveda?

Psychiatry in Ayurveda covers Bhutavidaya, one of the eight branches of Ayurveda; Manas prakriti, Manas Roga, Grahavigayna, devoted to health and disease state of mind.

What is the Concept of Mind in Ayurveda?

Mind is one of the dimensions of Ayu, an antarindriya i.e. Not visible from out side, related to perception, thinking and analysis of worldly objective. It may be as small as an atom and as big as universe. It is subtle and one but highly active and mobile.

What is the Definition of Mental Health as per Ayurveda ?

Ayurveda defines mental health as a state of quality well being i.e. “Prasnatnendriya manah” with ability to maintaining a positive continuum with the nature i.e. “Loka purusa samya”

What is the Definition of Mental Health According to WHO ?

WHO defines mental health as a state of well being in which the individual realizes his own abilities, can cope with normal stress of life, can work with productivity fruitfully and is able to make a contribution to his community or society?

What is Depression & Geriatric Depression?

Depression is a mental illness, which involves the body, moods, and thoughts of a person. It affects his family friendship, family responsibility, social behavior and overall performance, Or in other words a syndrome

complex characterized by mood disturbance plus variety of cognitive, psychological and vegetative disturbances. Geriatric depression is a heterogeneous condition that can result from various factors like physiological change of aging, disability, loss of resources, change of life style, with specific medical illness on drugs. It is under recognized and undertreated in older adult.

What is the Effect of Untreated Depression?

Untreated depression can delay recovery or worsen the outcome of other medical illness via increased morbidity or mortality.

How is Depression in the Elderly Different from his Young Counter Part?

Under reported and under diagnosed for three reasons: stigma, atypical presentation, and co- morbidities.

What are the Causes of Geriatric Depression?

Loneliness and isolation reduce sense of purpose, concomitant medical illness, drug effect, multiple losses like money, hopes. Dreams, friends, and recent adverse and unexpected life events. Although the etiology of geriatric depression remains unclear. Common final pathway:-- Genetics + Neurochemistry Adverse life events= Depression.

What are the Common Neuro-Psychiatric Disorders of Elderly in Ayurvedic Texts ?

Chittaabasada (depression), Smriti-buddhi-hrasa (Dementia and Alzheimer's disease), Unmad esp. vatic Unmad (Schizophrenia), Atatva bhinivesha (Delusional disorder), Chettod vega (Anxiety disorder), Manas Prakriti vikara (Personality disorder, Anidra (insomnia), Madatyaya (Alcohol drug abuse).

What are the Clinical Features of Geriatric Depression?

Overall, the clinical presentation of depression in old age is remarkably similar to that of depression in young adult. Following are the principal characteristics of a major depressive episode as outlined in Diagnostic and Statistical Manual IV of American Psychiatric Association. Depressed mood most of the day, either patient reports himself, or others find him tearful; markedly diminished interest or pleasure in almost all

*Professor, Department of Roga Nidana,
Institute of Post Graduate Ayurvedic Education & Research, At S.V.S.P. Kolkata - 700009*

activities ; significant weight loss ;persistent insomnia, with characteristic early morning awakening ; psychomotor agitation or retardation ; fatigue or loss of energy ; feeling of worthlessness ; diminished ability to think or concentrate, or being indecisiveness ;recurrent thought of death, recurrent thoughts of suicide with or without a specific plan, or suicidal attempt.

What are the Objectives of Geriatric Depression Treatment?

There are two fold objectives of geriatric depression as per western thought

- (1) Remission of depression and
- (2) Reduction in the risk of relapse and recurrence.

What are the Diagnosis Strategies of Geriatric Depression?

Diagnosis strategies includes search for possible medical causes, review of past psychiatric history, assessment of life stresses and dementia, and first episode of major depression.

What are the Guidelines of Management of Geriatric Depression?

It comprises of Pharmacotherapy (antidepressants like Tricyclic antidepressants, SSRIs, MAO inhibitors), Psychotherapy, interpersonal therapy, Cognitive behavioral therapy, Electroconvulsive therapy

What are the Guidelines for Jara Janya Chitta Abasada (Old Age Mood Disorder)?

Evidence based Ayurvedic management comprises of Rehabilitative Panchakarma (nourishment of body tissue through visceral, central, and peripheral approach i.e. Yapana vasti , Shirodhara, Snehana karma), Medhyarasayana (Neuronutrient from diet and medicine that promote intelligence, retard mental aging like Bramhi, Mandukparni, and Jyotishmati), Meditation (fixing the mind on spiritual ideals, these procedures balance neurotransmitters and hormonal level but it should be done on regular basis, systemically, and sincerely),Sattvic diet- (light diet, toned milk, fruit juice, and honey),Spiritual practices for reducing stress level (Voice of sages, mythological stories, writings of scriptures, Bhajan or devotional songs), Silent or shared prayer.

What is meant by Achar Rasayana?

Moral, ethical and spiritual code of conduct which produces direct effect on the potentiation of sattva guna or superior quality of mind.

Is There any Clinical Trial on This Topic?

In the year 2010, 34 patients of mild to moderate Geriatric depression designated as Jarajanya Manodainya were selected from OPD of Kayachikitsa; I.P.G.A.E.&R at S.V.S.P. KOLKATA. Diagnosis was done through Beck Depression Inventory Scale- a) Normal(0-9), Mild (10-15), Moderate(16-24),Severe(25+). After basal assessment, the patients were subdivided into three groups: subgroup-A(n=12), subgroup-B(n=12), and Control Gr(n=10).Group A patients were treated with” Aswagandha, Bramhi, Bala “ Yoga in the dose of 3gm twice daily for 90 days .Group- B patients received same formulation in dose and duration as per group- A along with Achara Rasayana, and control group with tab. Fluoxetine 10mg once daily for 10 days followed by 20 mg daily for 80 days. At the end of study the response of treatment was significant in group- B patients ($p < 0.001$).So, this plant formulation may be safely used in mild to moderate depression in old age in place conventional antidepressant Fluoxetine.

Conclusion

Objective of every medical scienceis to create happiness in the individual but approach is different.Geriatric depression is under reported and under recognized clinical condition. It is associated withfemale sex, separated marital status, low socio-economic level, poor social support ,and recent adverse and unexpected life events.Ayurvedic way of management is more helpful due to its total approach because it is not a drug treatment only.

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Thrust Area of Ayurveda for Global Promotion Opportunity and Threat

* *Dr. Achintya Mitra, M.D.*

***Jayram Hazra, M.D.*

Background

India has a great heritage of indigenous medical system since time immemorial based on philosophical concepts and uses of natural products for prevention and management of ailments. Indian System of Medicines (ISM) denotes Ayurveda, Yoga & Naturopathy, Unani and Siddha System of Medicines. Now a days, Ayurveda, the science of life, is a leading health care system and it has become the leader of the traditional system of medicine in India. Re-establishing its worth in global scenario in the light of huge demand with scientific validation is most needful and thrust area is emergently required. The small scale Ayurvedic products are now becoming large scale commercial commodity. It has not been doubted by anybody about the effectiveness of drugs belonging to Ayurveda. Challenge is made on its scientific validity with present knowledge and safety. It is a fact that there is inadequate research data in all aspects including quality control profiles of manufacturing of Ayurvedic drugs as well as clinical research in comprehensive manner like modern medical system. It is noticed since last few decades, there are several individuals and organizations practicing Ayurveda in different countries like USA, Latin America, European countries like Germany, England, Spain, Italy etc. where their credential is doubted. In most of cases, there are no institutionally qualified physicians, pharmacists and technicians available, which may cause unintended health hazard among the beneficiaries. Health care and services without skilled health personnel should be observed by regulatory body of concerned country for promotion of true Ayurveda whereas Preventive Ayurveda can be practiced by the non-Ayurvedic people.

Resources of Ayurveda

The natural products in different forms are being used in Ayurveda as drugs. 85% of drugs belong to plant products and 15% originate from inorganic natural resources like minerals, metals, animal products like milk, ghee, butter milk, urine etc. Plant parts like root, root bark, stem bark, heart wood, leaf, flower, latex, resin, bud and even in some cases whole plants are being used for preparation of medicines for therapeutic purpose. The medicines are used in different forms like fresh juice, decoction, infusion, powder, pill or tablet, *asava & arishta* (fermented products), *arka* (distilled substance), *avaleha* (semisolid substances), *bhasma* etc. The special characteristic features of Ayurveda is that it may be designed in a poly herbo- mineral form (organo-metallic) in accordance with the Ayurvedic chemical and pharmacological qualities in perspective of therapeutic indication. Not only are the medicines, Ayurvedic techniques are now being accepted by the present day scientists. *Kshara sutra* surgery, Panchakarma therapy (a group of techniques for bio-cleansing), *Jaloukavacharana* (leech therapy) etc. are widely practiced every where and approved by WHO.

Compliance of GACP/GLP/ GMP / GCP

Medicines are the subjective health care tools. They should satisfy the stated and implied needs of the consumers. The patients or consumers are the primary users. However, the primary consumer of a drug

manufacturer is the physician from an operational point of view, who prescribes medicines.

The physician has an expectations about the medicine in terms of its efficacy, quality, safety etc. The end user, i.e., the patient, also has very definite expectations about the efficacy, vigilance, out look & hygiene, convenience, cost effectiveness, etc about the medicine that he uses. In the consequence of the fact, drug research is now the primary work of researchers of Ayurveda and other Indian System of Medicines. Validation of traditional manufacturing processes and testing, standardization of drugs, chemical characterization, quality assurance, evaluation of biological activity and pre-clinical toxicity study etc. are now initiated by the Govt. of India. In pursuing the fact, compliance of Good Agriculture and Collection Practice (GACP) and Good Manufacturing Practice (GMP) are the primary and principal mandate of policy makers to ensure the safety and interest of the consumers and patients. GACP can ensure the quality and standard of raw materials which are being cultivated and collected from forest. Use of bio-fertilizers, bio-pesticides, organic manures, proper harvesting practice are of the key points on GACP, however there are so many ethical and legal issues associated to strengthen the values. Good Laboratory Practice (GLP) compliances are required for identification, authentication, chemical characterization, quality control, development of SOP, bioactivity study and toxicological studies etc. In clinical research, there is ample opportunity to serve

* *Research Officer (Ayurveda)/ Scientist-II, ** Director,*

CCRAS, Deptt. of AYUSH, Ministry of Health & F.W. Govt. of India, Kolkata - 700 091

the people globally by its outcome. Compliance of Good Clinical Practice (GCP) in Ayurveda and ISM are now mandatory as per declaration of Helsinki. *Panchakarma* therapy and *Ksharasutra* surgery is now going to be recognized by World Health Organization. Research on different diseases / conditions like post-cerebro vascular accident and rehabilitation, sciatica, psoriasis, rheumatism & rheumatoid arthritis, osteoarthritis, peptic ulcer syndrome, diabetes mellitus, motor neuron disorders, occupational stress disorders, ano-rectal diseases etc. have revealed that there are promising outcomes which may serve in the dark area of medicine. Ayurveda has a very effective role to prevent the life style diseases and simultaneously this pathy is also applicable in rare diseases like Wilson's disease, Myopathy, Parkinson's diseases, endometriosis, etc. Ethical issues related to animal study and human researches are also important in all research cases.

Quality Assurance

Interest and demand for herbs, plant products, botanicals and indigenous natural resources has been generated all over the World particularly in last decade. The Global market and industry for plant based products have been growing rapidly in recent years. The global, over the counter (OTC) herbal market in US is 62 billion dollars with growth rate of 7 %. Out of this India's share is a mere 5% of the total market. Ayurveda is richest source of Plant products and formulations in all aspects. Ayurvedic formulations became commercialized and home scale to large scale production has been initiated. Unfortunately there are not enough existing standard operating procedures is available for compound or poly herbal or polyherbo-mineral formulations in Ayurveda incorporated with latest parameters which is required in present era to revalidate the role of Ayurveda in therapeutics. Maintaining of quality of products is quite impossible from manufacture to manufacture, batch to batch even in lot to lot due to unavailability of SOPs of compound ASU formulations. Ever growing demand of Ayurvedic formulations / products may not be viable or reproducible without fixing SOPs for particulars formulation. Standard drugs are well defined, consistent in quality, utilized for effective therapeutic efficacy without any adverse events and standardization of herbal drugs or plant products embodies total information and control that are necessary to guarantee consistency of composition, effectivity and bioactivity. Developing SOPs of manufacturing of classical and patent products to maintain the quality control of products is the major thrust area of ISM for ensuring the safety and efficacy of drugs.

Major area of contribution

Ayurveda, the science of life, is closely associated with

Indian culture, heritage, daily regimen and spirituality. The concepts of Ayurveda, principles, practices, drugs, techniques are implicated in curative and preventive perspective. The treatment procedure or approach may be divided into two major groups, i.e. *Samana* therapy and *Sodhana* therapy (*Panchakarma* therapy). *Panchakarma* is the spirit of Ayurveda. It is the process which gets to the root cause of the problem and corrects the essential balance of intrinsic factors in the body. *Panchakarma* is not only good for alleviating diseases but also a useful tool in maintaining comprehensive excellent health. Ayurveda advises undergoing *Panchakarma* at the seasonal changes to clean the body, improve the digestion and to improve the metabolic processes. *Panchakarma* is the primary purification and detoxification treatment, which includes the "five therapies". It contains three parts, namely *Poorva Karma* (pre-therapeutic measures), which includes *Paachana* (digestion), *Snehana* (internal and external oleation) , *Swedana* (fomentation) ; *Pradhan Karma* (main therapy), which includes *Vamana* (induced vomiting), *Virechana* (induced purgation), *Vasthi* (medicated enema or colonic irrigation), *Nasyakarma* (nasal administration) and *Raktamokshana* (selected bloodletting); *Pashchat Karma* (post-therapeutic measures), which includes *Sansarjanakrama* (Specific dietetics), *Rasayana Chikitsa* (rejuvenation) and some rules to follow specific activities. This series of five therapies help to remove deep rooted stress and illness causing toxins from the body while balancing the *doshas* in biological enzyme activities. *Ksharasutra* surgery is now a globally accepted technique. It has tremendous therapeutic values in the treatment of ano-rectal diseases like hemorrhoids, fistula in- ano, fissure in ano, polyps, etc. The treatment procedures are very beneficial and cost effective. Geriatric health care through Ayurvedic principles is now being practiced with good repute. *Rasayana* (rejuvenation) and *Vajikarana* (andrology) chikitsa is now very famous and lot of research work is now being initiated by Ministry of Health & Family Welfare, Govt. of India. Effect of Ayurvedic drugs in some geriatric health hazards like G.I.tract problems, sleep disorders, early senile dementia, Alzheimer's, osteo-arthritis, respiratory disorders etc. is very promising.

Collaboration of Work

The collaboration study is emergently required to boost up Ayurveda as global entity. Ministry of Health & Family Welfare, Government of India through different research councils like CCRAS, CCRUM, CCRAS, CCRYN has planned and launched different promotional and developmental schemes to execute research programme in collaboration with allied disciplines. National Medicinal Plants Board is also now offering different promotional and commercial schemes

targetting all groups of beneficiaries. Voluntary organizations, trusts, universities, Institutes and State Government authorities are permitted to carry out the schemes related to medicinal plants. Even Department of Science & Technology, Department of Biotechnology, Ministry of Rural Development, Ministry of forestry etc. are providing schemes on Ayurveda and medicinal plants. Collaborative studies with different scientific disciplines like chemistry, pharmaceutical technology, pharmacognosy, pharmacology etc. are established as the path way for re-establishment of Ayurvedic values.

Conclusion

There is 15% annual growth of ASU drugs due to the increased global acceptance and demand. Thereafter, implementation and utilization of Ayurvedic principles and practices for sufferers may be strengthened with practical feasibility, inbuilt scientific information and validation which are appropriate in present day. Direct intervention & regulation by the stakeholder and multi-systemic rational approach to re-establish the facts is now most important to get optimum outcome.

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.
- Publication will be made on the basis of the recommendation of editorial board.

Editor

Babe Ke Ayurvedic Medical College & Hospital, V.P.O. Daudhar,

Distt. Moga (Pb.) 142 053

Contact No. :- 01636-253088, 94171-12450

bkamritsanchar@yahoo.co.in

A Clinical Study to Evaluate the Bowel Regulatory Potential of “Shriphaladi Khanda”

Dr. Abhishek Upadhyay **Prof. Y.K. Sharma *Dr. Sharad Johri **** Dr. Rajesh Manglesh*

Introduction-

Life style of mankind has changed due to changing world and it is now hard to keep up with the pace of life. People's dietary habits have changed substantially with increase in consumption of meat, dairy products, vegetable oils, fruit juices and alcoholic beverages. People are more into the habit of junk and spicy food. Fiber in the diet has reduced a lot. Further stress has become an inescapable part of modern life. These life style changes have impact on every organ system of human body in some or other way.

Like any other system, the digestive system is also sensitive to changing life style and it can be easily disrupted by a poor diet, lack of fluid, too little exercise, absence of routine and high level of stress. The digestive system releases the fuel we need to lead our lives and dispose of the waste that is left. Ensuring it remains free flowing plays an essential part in achieving inner health. Around half of all the people have bowel problem at some time in their lives. These can happen in the form of constipation or diarrhoea.

Constipation is a frequently encountered problem in patients visiting to the medical OPD. Although it is not a life threatening problem, even then it causes great distress to persons afflicted with it. Constipation has been defined as a frequency of defecation less than three times per week with subjective complaints of excessive straining, hard stools, lower abdominal fullness and a sense of incomplete evacuation. Constipation can be managed with little adjustments in life style like increased fiber in the diet, increased fluid intake, regular physical activity, keeping relatively fixed time for defecation etc. Even if, after these lifestyle modifications constipation persists, various medications like laxatives, suppositories, enemas can be used to treat constipation. Currently available treatment options for constipation are associated with various limitations either due to the latency period of action, habit forming nature or due to adverse effects of the drugs.

Various herbal formulations are also available for the treatment of constipation, which are non-habit forming but palatability is the limiting factor for their use. Keeping all these facts in mind, an attempt has been made to formulate an effective, safe, non habit forming, cost effective, and palatable herbal remedy for constipation. Present study was planned to evaluate the bowel regulatory potential of an Ayurvedic formulation

“Shriphaladi Khanda” with special reference to vibandha/ constipation.

Aims and Objectives

- To understand the Aetiopathogenesis of Vibandha in view of Ayurvedic as well as modern view.
- To evaluate the efficacy of an Ayurvedic formulation “Shriphaladi Khanda” containing Pakva Bilva Majja Churna, Amaltas Phala Majja churna, Shatpushpa in the management of Constipation.

Materials and Methods

1. Selection of the patients:- The current clinical study was carried out on a single group. During the study total 23 patients were registered and put into the trial. Patients fulfilling the inclusion criteria were selected randomly after their voluntary consent. Patients were included in the trial irrespective of their Sex, Caste, Religion, Education etc.

2. Criteria for selection of Patients-

a. Inclusion Criteria:-

1. Patients willing for the trial.
2. Patients in age group between 18-60 years.
3. Patients of habitual constipation.
4. No associated chronic ailment.

b. Exclusion Criteria:-

1. Patients not willing for the trial.
2. Patient below 18 years and above 60 years of age.
3. Haemorrhoids (3rd and 4th degree)
4. Rectal prolapse, Intestinal obstruction, Diabetes, Diabetic enteropathies, Diarrhoea, Pregnant women, Anal strictures, Intussusception, Different types of Hernia, Intestinal perforation, Carcinoma (Malignancies),
5. Showing any allergy to trial drug

Protocol of Research

Trial Group

Present study was done on a single trial group. Total 23 patients were registered in the trial after their written informed consent.

Trial drug and its Ingredients

The selected patients were given the trial drug “Shriphaladi Khanda”. The drug was prepared using following ingredient.

1. Pakva Bilva Majja Churna - 3 parts

** Lecturer, Department of Kayachikitsa, BKAMCH, Daudhar, Moga (Pb.), ***Reader, GAC Lucknow. U.P.*

*** HOD, Deptt. of PG & **** Lecturer, Deptt. of Ro Nidana, RGGPGAC Paprola*

2. Amaltas Phala Majja Churna - 2 parts
3. Shatpushpa (Saunf) - 1 part
4. Guda - Q.S.

Preparation of Drug

Trial drug was prepared in the college Pharmacy in the form of granules by using Guda as binding agent.

Administration and Dose of Drug

- ❖ Administration - Orally
- ❖ Dose - 10gm BD after meals
- ❖ Anupana - Luke warm water

Duration of the trial

The total duration of the trial was of 15 days.

Follow-up

The patients were advised to come for follow up after 7 days of initiation of trial to observe the effects and adverse effects of trial drug.

Criteria of Assessment

Assessment was done on the basis of relief in signs and symptoms. Each criteria was given four grades ranging from 0-3 depending upon the severity of the symptom. Scoring system was adopted for statistical analysis of results obtained. Criteria used for assessment were -Consistency of Stool, Discomfort in abdomen, Pain in Abdomen, Bloating (Distension) in abdomen, Painful bowel movements, Rectal Bleeding /tearing during bowel movement, Satisfaction after bowel movement, Straining or squeezing or manual maneuvers to pass bowel, Number of visits to toilet per day, Average time spent in toilet per visit and Visual Analogue Scale.

Statistical Analysis

The scores of criteria of assessment were analyzed statistically in terms of mean score B.T. (Before treatment), A.T. (After treatment), (B.T.A.T.) difference of mean, S.D. (Standard deviation), S.E. (Standard error). Students paired 't' test was carried out at $p < 0.05$ and $P < 0.001$. Overall results were established in terms of percentage relief obtained in criterias of assessment.

- ❖ Cured - 100%
- ❖ Excellent improvement - 75-99%
- ❖ Moderate Improvement - 50-74%
- ❖ Mild Improvement - 25-49%
- ❖ No improvement - 0-24%

Discussion over criteria of Assessment-

In the present study, total 23 patients were registered out of which 22 patients completed the trial and one patient did not turn up for follow up and was considered dropout from the trial.

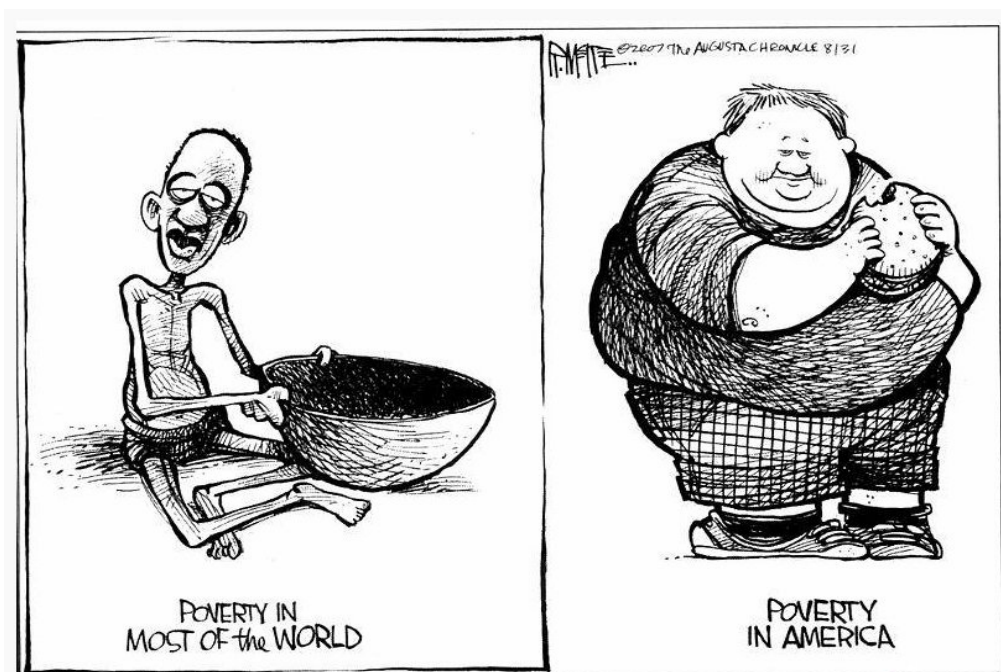
In the present clinical trial the most common presentation with which the patients reported were hard consistency of stool (100%), discomfort in abdomen (100%), reduced satisfaction after bowel movement (100%), increased straining-squeezing and using manual maneuvers to pass bowel (95.45%), bloating in abdomen (86.36%), increased average time spent in toilet per visit (72.73%) and reduced number of visits to toilet per day (45.45%). The other important but less common presentations of the patients were pain in abdomen (40.91%), painful bowel movements (27.27%) and rectal bleeding or tearing during bowel movements (13.64%). These symptoms are in accordance to the symptoms often encountered in constipated subjects. The percentage relief in hard consistency of stool was 100% which was highly significant at $p < 0.001$ ($t=9.94$). Discomfort in abdomen was present in all the patients. The percentage relief in this symptom was 75.76% which was highly significant at $p < 0.001$ ($t=7.69$). Pain in abdomen was present only in 40.91% patients. Although the percentage relief was 80.18% but it was insignificant at $p > 0.05$ ($t=2.07$). This may be due to small sample size in this symptom. The percentage relief in bloating in abdomen was 51.63% which was significant at $p < 0.001$ ($t=6.58$). Painful bowel movements were present only in 27.27% patients. Although the percentage relief was 100% but the result were insignificant at $p > 0.05$ ($t=1.35$) because results were seen in lesser number of patients. Rectal bleeding or tearing during bowel movement was complained by only 13.64% patients. The percentage relief in this symptom was 67% which was insignificant at $p > 0.05$ ($t=0.54$). This symptom was also studied in lesser number of patients. Less satisfaction after bowel movement was reported by 100% patients registered in the trial. The relief in terms of percentage was 74.01% which was highly significant at $p < 0.001$ ($t=11.2$). Straining, squeezing or using manual maneuvers to pass bowels was reported by 95.45% patients. The percentage relief in this symptom was 82.10% which was highly significant at $p < 0.001$ ($t=9.5$). Number of visits to toilet per day were reduced in 45.45% patients. Some patients were going to toilet once in 3 days. Percentage relief was 100% with significant p value < 0.05 ($t=2.53$). It was observed that every patient after taking treatment was going to toilet once or twice a day. Average time spent in toilet per visit was increased in constipated subjects. There was highly significant improvement in this symptom after treatment. The relief obtained in terms of percentage was 77.88% which was highly significant at $p < 0.001$ ($t=4.63$). As per Visual Analogue Scale results of therapy were highly significant. The relief obtained in terms of percentage was 96.55% which was highly significant at $p < 0.001$ ($t=10$).

Conclusion

Overall response of the trial drug “Shriphaladi Khanda”

on the patients was like that 5 patients were completely cured, 12 patients showed excellent improvement, 5 patients were moderately improved and there were no such patients who showed mild or no improvement. No patient was found to be deteriorated during the study. There were two patients who complained of loose stools with frequency of 2-3times/day. On the basis of observations of this study it can be concluded that the trial drug

“Shriphaladi Khanda” administered orally has definite role in the bowel regulation i.e. in the management of vibandha/ constipation. There were no side effects observed during the period of the study. The more effective results of the drug were observed after 2-3 doses. Thus on the basis of results it can be stated that “Shriphaladi Khanda” is an effective, safe, palatable herbal formulation in management of Vibandha/ constipation.



Complex Avaran Samprapti in Essential Hypertension

Dr Atul Kelemen

Many Ayurvedists have launched their theories of single Avarana for explaining the concept of hypertension but none has adopted the theory of Mishra Avarana, a concept of Charaka (Ch.Chi.28/232) which might have been left incomplete for intellectuals (Ch.Chi.28/217). In Raktapradosha Vikaras most of the symptoms compiled by Charaka are an assembled form of essential hypertension symptoms (Ch.Su.24), in the same chapter Charaka has described the aetiopathogenesis of Mada, Murchha and Sanyasa which may be the effect on hypertension. Therefore Raktapradosha is also the reference which provides the key in the right direction towards the theory of essential hypertension based on Ayurveda. So the most probable ways of hypertension like Mishra Avarana, Raktapradosha and Anyonyavarana have been considered in the present study.

Avarana Samprapti of EHT :

Charaka has quoted only two types of Vata prakopa in Chi 28.

- 1) **Dhatukshayajanya Vata Prakopa**
- 2) **Margavarodhajanya Vata Prakopa**

But many scattered references give the concrete probable idea about Swanidanena prakupita Vata also, e.g. Thus following are the three pathophysiological ways of vitiation of Vata :

- **Swanidanena Vata Prakopa**
- **Dhatu Kshayajanya Vata Prakopa**
- **Avaranajanya Vata Prakopa**

Thus these three processes of Vataprakopa are having pivotal role in the manifestation of Vata Vyadhi in which Prakupita Vata vitiates those Srotasas which are already deranged (Ch.Chi.28/18).

Swanidanena Prakupita Vata also has a role in the manifestation of Avarana (Ch.Chi.28/60, 5/6).

- **Avarana induced Vataprakopa**

Avarana means to mask, to obstruct, to overlap or to cover. Avarana indicates the obstruction of Vata. In each and every function of body, Vayu is involved according to place and action. However this organization of body physiology is under the control of 'Panchatma vayu'. In each and every disease pathogenesis, the involvement of particular bhavapadartha i.e. Dosha, Dhatu and Mala accordingly is being stated. These entities are murta (Sthula) and amurta (Sukshma) in their constitution. In the sense of Avarana, entity which gets obstructed is

called Avarya and which obstructs is Avaraka. In Avarana process either visible entities or invisible entities (Anyonyavarana) are in Avaraka form. But the Avarya is always invisible i.e. Amurta Vayu. Obstructing entity is always strong to diminish the functions of obstructed entity (Avarya).

Avarana of Vata has been described having three varieties; i. Avarana of Samavata by Vriddha Dosha and Dushya ii. Avarana of Vriddha Vata by Sama Dosha and Dushya iii. Avarana of Vriddha Vata by Vridha Dosha and Dushya Avarana is one of the common roots in the pathophysiology of EHT. Hence one can trace the symptomatology of EHT from the different Avarana stated below: Among these three, only Raktavarana of Vayu is enumerated in the classical texts. Thus in complex Avarana process Rakta Dhatu is common in each and every probable way of Samprapti by its whole or fractional characteristics. There fore most of the learned people in Ayurveda think more about Rakta Dhatu but Rasa and Rakta Dhatus are common participants in normal as well as in raised blood pressure. Rasa and Rakta are circulating all over body continuously thus blood pressure is the pressure applied by Rasa-Rakta Dhatu on the lateral walls of Sira and Dhamani. But when any obstruction comes in the way of Vayu which is giving the kinetic energy for circulation of Rasa and Rakta Dhatu it will cause Karma Kshaya of these two Dhatus by impairing the properties (Chala Guna) of Vyana Vayu, Udana Vayu and Prana Vayu. All these processes are chronic in nature therefore simultaneously it also causes Vyana, Udana and Prana Prakopa in the later phase to rise the blood pressure. In most of the patients of essential hypertension, lakshanas of Kapha, Pitta and Rakta Prakopa with the lakshanas of Vata prakopa are present. In fact in raised blood pressure Avarana process has very pivotal role but thinking in a single direction (single Avarana, Gatatva etc.) is not so logical because symptomatology in hypertension has many variations and these variations can't coincide completely with any single Avarana or Gatatva.

Kapha Avrita Vata :

Generally particular Gunas in Dravya constitution of Kapha, Pitta are responsible for the Avarana process. If the Avarana is happening in Rasavaha Srotasa (Hridaya and Dasha Dhamanis) to manifest EHT, the vitiation of

*Reader, Department of Kayachikitsa,
Babe Ke Ayurvedic Medical College & Hospital, VPO. Daudhar, Distt. Moga (Pb.)*

Kapha and Pitta in Pravahi Rasa Rakta Dhatus is indispensable. Here Avarita may be Vyana, Prana or and Udana.

- Vyana Vayu performs the Karmas like Gati, Prasarana, Akshepa, and Nimesha. Consequently in both Charaka and Sushruta the symptoms of Kaphavrita Vyana are very much appertaining to Gati and Cheshta.
- In Kapha Avarana mainly Guru, Sheeta, Manda and Stheera Gunas are involved which are responsible for obstruction. The symptoms are: Guruta Sarvagat-ranam, Gati Sanga (Ch.Ch.28/229), Cheshtastambha (Su.Ni.1/39).
- In Kaphavrita Prana the symptoms are predominantly related to Pranavaha Srotasa which may be involved in EHT Nihiswasa Sangraha (Ch.Ch.28/223).
- Some of the symptoms of Kaphavrita Udana may be present in EHT, Vaivarnya, Vakaswaragraha, Daurbalya, Gurugatratva and Aruchi etc. (Ch.Ch.28/225)
- When Kapha impinges the force of Vata it manifests the symptoms, Shaitya, Gaurava and Shoola etc. (Ch.Chi. 28/62) which may coincide with the symptoms of EHT.

Pitta Avarita Vata :

- When kinetic force of Vyana Vayu is obstructed by Pitta certain symptoms come in to existence manifesting the disease EHT. Here Drava and Sara Gunas are important in the obstruction of Chala Guna of Vata, after that Ushna and Tikshna Gunas sited over Pitta will manifest Daha, Sarvanga Klama, Gatravikshepa, Sasantapa, Savedana (Ch.Chi.28/227-228, S.Ni.1/38)
- Pitta hinders Prana Vayu to manifest most of the Pratyatma Lakshana Sanchaya of EHT here also above listed Gunas perform obstruction and manifest Murchha, Daha, Bhrama, Shoola, Vidaha etc. (Ch.Chi.28/221)
- When Pitta obstructs (by same Gunas listed above) the pathway of Udana Vayu, many symptoms come into existence which are very close to EHT symptomatology i.e. Murchha, Daha, Klama, Ojohhransha etc (C.Ch. 28/224, S.Ni.1/35).
- In general Avarana of Pitta there are certain symptoms which can almost can be correlated with EHT symptomatology i.e.Daha, Trushna, Shoola, Bhrama, Tama and Vidaha. (C.Ch.28/61, S.Ni.1/32).

Rakta Avarita Vata

When Rakta obstructs Vata, it causes many symptoms which partially coincide with EHT symptomatology i.e. Daha, Arti, Saraga Swayathu and Mandala (Ch.Chi. 28/64) Suchibhiriva Nistoda, Sparshadwesa, Prasuptata, Daha, Santapa, Murchha etc. (Su.Ni.1/33)

Meda Avarana

Meda Dhatu is also to be considered here. Main Karma of Medasa is to provide Sneha to each and every Dhatu. If one is taking fatty diet, it directly goes to Medasa situated all over the body through Rasa-Rakta Dhatu. Therefore it is physiological function of Medasa to accumulate Sneha and share it with all Dhatus according to their needs. Mahabhuta constituents of Medasa are Prithvi and Jala. For physiological functions in the body these constituents should be in normal quantity. Vitiatio of any of them or both will cause the imbalance of physiological functions of the body.

Medasa : Prithvi + Jala

By the dominancy of Jala Mahabhuta Mrudu, Snigdha, Hima and Pichhila properties of Medasa are maintained. By the involvement of Prithvi Mahabhuta Guru, Manda, Sandra, Sthira and Sthula properties of Medasa are maintained. This is the physiological balance (Prakrita Sanghata) of the Medasa Dhatu. When imbalance of these two Mahabhutas takes place it causes Santarpanajanya Vyadhis. Medasa: Prithvi + Jala (Excessive) cause Santarpanajanya Vyadhis e.g. Prameha. In Prameha Nidana Charaka has described Bahu and Abaddha Meda which is abnormal in nature and is caused because of excessive Jala Mahabhuta in the Medasa Dhatu all over body (C.Ni. 4/6,7). Sthaulya and Karshya are Rasanimittaja and excessive ingestion of Madhura Rasa and other Nidanas leads to Ama-Annarasa and extra Sneha in the body to form extra Meda. (S.Su.15/32). Thus if this Medasa is increased by Jala Dhatu excessively it has to take shelter in those Dhatus which are Drava in nature, because flowing is the common and important property of Dravibhuta Sneha and Rasa-Rakta Dhatu. Dravibhuta Sneha is the part of Medasa Dhatu which is having a comparatively thicker consistency than Rasa and Rakta Dhatu which is in contrast to the Sukshma Srotasanusari property of Rasa Dhatu. Thus by increasing the obstruction in Dhamani and Sira and enhancing the activity to lower the kinetic force of Vyana Vayu, Udana Vayu and Prana Vayu. By this response Vyana Vayu Prakopa occurs, thus increasing blood pressure (C.Ch.28/59). This pathogenesis may take place without Prameha but Bahu (excessive) and Abaddha (loose) Medasa are the essential factors.

Medasa : Prithvi (Dominant) + Jala

This condition leads to excessive Baddha Medasa (Arthapatti). Teja Mahabhuta and Vayu Mahabhuta dry the Dravatva and Snehatva and increases Sthira, Sandra and Ruksha Guna in Medasa simultaneously increasing Meda Dhatu. Siras originate from Mrudu Paka of Medasa Dhatu (Su. Sh. 4/30) Paka is the main Karma of Agni. Here the constitution of Medasa changes by the Sanskara of Agni. By the Ushna Guna of Agni the drying of Sneha in Medasa takes place then by Paka kriya Agni

changes its form into particular Sira form. Vayu also acts here to dry the Sneha and to trigger the Agni to perform its work. Akasha and Vayu functions in the formation of the lumen part (Dalhan com. Su.Sh.4/30 & 5/3). The Mahabhuta configuration of Meda should be normal for proper function of Sira. In abnormal condition of Medasa, Siras also change from normal to abnormal and in later phase this abnormal Medasa can obstruct micro to gross channels and manifest many diseases like hypertension and coronary artery disease.

➤ Anyonyavarana:

Symptoms of EHT found in following types of Anyonyavarana:

- Vyanavrita-Prana: Atisweda, Lomaharsha, Suptagatrata. (Ch.Chi. 28/203)
- Pranavrita Udana: Shirograha, Pratishyaya, Nihiswasochhaswasa Sangraha, Hridroaga, Mukhashosha. (Ch.Chi.28/ 206-207)
- Samanavrita Vyana: Murchha, Tandra, Pralapa, Angasada, Agni-Oja-Bala Kshaya. (Ch.Chi.28/213)
- Samanavrita Apana: Grahani, Parshvahriddaga. (Ch.Chi.28/205)
- Pranavrita Vyana: Symptomatology of this is somewhat similar to that of hypotension - Sarvendriyanam Shunyatvam, Smriti Kshaya, Bala Kshaya. (Ch.Chi.28/202)

Thus majority of symptoms mentioned in different Avaranas are similar to that of EHT. But not a single symptomatology of Avarana is complete in itself to cover all the symptoms. Thus the complete symptomatology can be found in different locations of Avarana and Raktapradoshaja Vikaras. Hence the concept of

Mishra Avarana (Complex) along with Raktapradosha is very logical to think upon here.

Charaka has listed Mishra Avarana (Complex) in Different Places

- Madhumeha Samprapti (Shleshma, Pitta, Meda and Mansa Avarita Vata- C.Su.17/79-80),
- In the indication of Virechana and Eranda Taila (Meda, Kapha, Pitta and Rakta Avrita Vata -Ch.Chi. 26/28) and
- Superficial reference of complex Avarana (C.Ch. 28/231).

Symptoms of essential hypertension are much close to Kapha, Pitta, Rakta and Meda Avarana and Rakta Pradosha in unison. Whenever there is a complex of symptoms of different Doshas it should be called as Mishra Avarana. (Ch.Chi.28/231), Vagbhata has elucidated the theory of Mishra Avarana somewhat in detail. He says that there are innumerable types of Mishra-Avarana in which Pranadi five types of Vayus and Kapha, Pitta, Sapta Dhatu, Trimalas these twelve entities take part. Taratamya and Vikalpa in their complex again give the infinite types of complex Avaranas (As.S.Ni.16/55-56). But these Mishra Avaranas can be diagnosed on the basis of symptomatology and aggravated or decreased functions of involved types of Vata as well as their Sthanas. (As.S.Ni. 16/54-55). By taking all contexts of Avaranas and EHT symptomatology into consideration, conclusion can be drawn that 'Rakta, Meda, Pitta, Kapha' and 'Vyana, Udana, Prana' are the most probable participating entities found in the complex Avarana of EHT.



Role of Piyalbijadi Lepa in the Treatment of Dandruff

Dr. Tushar Kanti Roy (M.D.)

Introduction

There is no doubt that the world of today is full of glamour and glory. Thus the concept of beauty is gaining more and more attention globally. Beauty is defined on some factors, among them hair is an important one. 'Ovid' said in brief words "ugly is a field without grass, plants without leaves and head without hair". So hair is the most highlighting part of the body. It has a great aesthetic value and it is the crowning glory of any person. Dandruff is a common scalp disorder affecting almost half of the population at the pre-pubertal age of any gender and ethnicity¹. No population in any geographical region would have passed without being affected by dandruff at some stage in their life². The word dandruff (dandruff, dandriffe) is of Anglo-Saxon origin, a combination of 'tan' meaning 'tetter' and 'drof' meaning 'dirty'. Dandruff affects aesthetic value and often causes itching. It has been well established that keratinocytes play a key role in the expression and generation of immunological reactions during dandruff formation³. The severity of dandruff may fluctuate with season as it often worsens in winter⁴.

Dandruff Composition

Dandruff scale is a cluster of comeocytes, which have retained a large degree of cohesion with one another and detach as such from the surface of the stratum corneum. The size and abundance of scales are heterogeneous from one site to another and over time. Parakeratotic cells often make up part of dandruff⁵.

Microbial Etiology of Dandruff

There could be several etiopathologic pathways with complex mechanisms, which may cause dandruff. The role of lipophilic yeast belonging to the genus *Malassezia* was widely accepted to play a role in dandruff.

Non-Microbial Etiopathology of Dandruff⁶

The non-microbial cause for dandruff is well established. Excessive exposure to sun light is known to cause desquamation of the scalp. Minimal irritation of scalp due to Over shampooing, Frequent combing, Excessive use of hair styling product (Gel, hair dye, hair curler), Tight fitting hats, Allergic reactions, Cold weather, Dry environment, Excessive perspiration, Hormone imbalance, Excessive Stress, Lack of sleep, Dusts.

Normal Scalp

- Skin cell migration is 28 days
- Cells shed as single cells

Dandruff

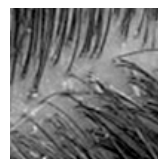
- Cell migration is 7-21 days
- Cells shed as clumps of 100-1000 cells

Seborrheic Dermatitis

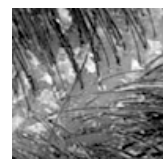
- Cell migration is 7-21 days
- Cells shed as clumps of 100-1000 cells
- It is more severe case of dandruff
- It may also include erythema

Dry Scalp

- Skin cell migration is 28 days
- Dry skin flakes are typically clumps of 10-25 cells



Normal Scalp



Dandruff



Seborrheic dermatitis

Out of various formulation observed in the Ayurvedic classics piyala bijadi lep compound drug of plant origin was considered to have potentially active on the dandruff on analysis of the pharmacological property of the drugs. For the evaluation of the effect of the trial drugs, three drugs of plant origin namely piyal (seeds of *Buchanania lanzan*), Kustha (root of *Saussurea lappa*), yasthimadhu (root of *Glycyrrhiza glabra*) were selected for the present study.

In this study patients were randomly divided into 4 groups. Group A included 16 patients who were administered the powder of Yasthimadhu applied externally on scalp as a paste made with water (in the dose of 10 gm) 30 minutes before bath (once a day) for a period of 30 days. Group B included 14 patients who were administered the powder of kustha applied externally on scalp. Group C included 10 patients who were administered the powder of piyal bij applied externally on scalp. Group D included 18 patients who were administered the powder of yasthimadhu, kustha

Lecturer, Department. of Kaya Chikitsa,

Babe Ke Ayurvedic Medical College & Hospital, VPO. Daudhar, Distt. Moga (Pb.)

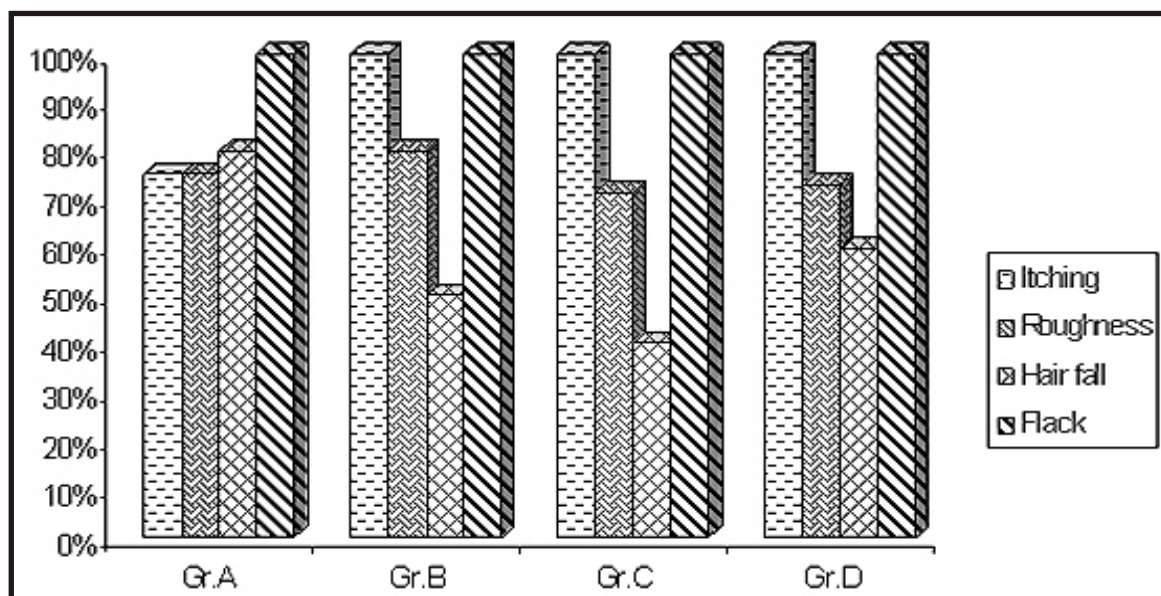
and piyal bij applied externally on scalp.

During the period of study any other medicine orally or locally which affecting the scalp was avoided. No specific diet was formulated for the patients treated in the present study. They were allowed to take their usual diet.

Showing Comparative Analysis of the Response of Treatment

Sr. No.	Clinical features	Group A		Group B		Group C		Group D	
		% of relief	P value	% of relief	P value	% of relief	P value	% of relief	P value
1.	Itching	75%	<0.05	100%	<0.001	100%	<0.02	100%	<0.001
2.	Roughness	75%	<0.01	80%	<0.02	71.42%	<0.01	72.72%	<0.01
3.	Hair fall	80%	<0.001	50%	<0.05	40%	<0.05	60%	<0.05
4.	Flakes	100%	<0.02	100%	<0.01	100%	<0.01	100%	<0.001

Comparative Analysis of the Response of Treatment



Showing the Total Response of the Drug

Response	No. of patients				Total patients	%
	Group A	Group B	Group C	Group D		
Cured	8	7	5	10	30	51.72%
Marked improvement	6	6	3	8	23	39.66%
Moderate improvement	2	1	2	0	5	8.62%

Conclusion

After a treatment of 30 days the result were assessed in terms of the subjective improvement. The response of treatment to the subjective improvement were judge by applying a scoring method also. In this study 51.72% patients were cured. 39.66% patients had marked improvement. and 8.62% patients had moderate improvement.

It was found in the statistically analysis the response of Yasthimadhu in group A patients is highly significant in hairfall and roughness, whereas kustha in group B patients is highly significant in itching and flakes, in group C (piyal bij) patients is highly significant in roughness and flakes and in group D patients is highly significant in itching, roughness and flakes.

Any side effect or toxicity was not observed during the study period. Local application of the trial drug was found to be a potential remedial measure for patients suffering from dandruff. It could reduce the complaints of the patients within 1 week and can make them free from the symptoms within 30 day of treatment.

The individual components of “Piyal bijadi lepa” has played a particular role as stated in the previous paragraph but all the components when combined together (called as “Piyal bijadi lepa” in the text) was found to be effective on all the clinical features.

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HAMBONE by Mike Flanagan

The Skin; Surprise Dead cells even play Important Functions

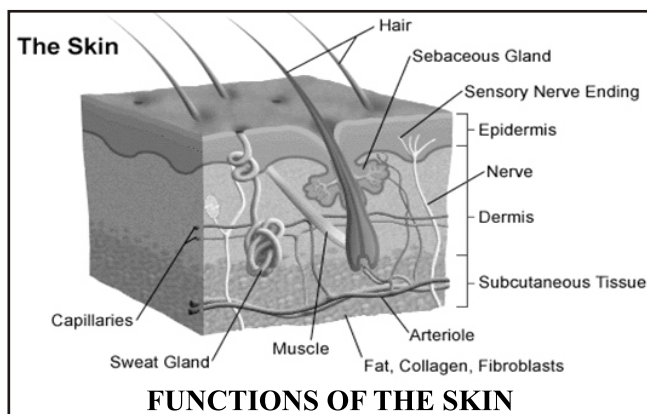
***Dr. S. P. Tiwari (M.D., Ph.D.) **Dr. Nilesh Kasar (M.D.) ***Dr. Sneha Tiwari (B.A.M.S.)**

Introduction

Skin is the biggest organ of body. It constitutes the integumentary system, comprising hair nails etc. It constitutes 16% of body weight. Skin has a total surface area is 1.2-2.2 m². It is a combined product of ectoderm as well as of mesoderm. Akin nervous system epidermis is developed from ectoderm, where as dermis from mesoderm. It is the Updhatu of Mansa Dhatu, which may be because of the common germinal base. The muscles and dermis both are the organs with mesoblastic origin. Dermis is a well vascularised structure, it is very active organ. Epidermis has no blood vessels, only its basal layers get nourishment from the source of dermis being next to it. Skin is called as Mansavaha Srotas.

Mansavahanam cha srotasam Snayurmoolam twak cha,

As per Charaka is suggestive to this fact. Since skin synthesises vitamin D, and vitamin D is a basic source for calcium. It is assimilated and absorbed from the gut with assistance of vitamin D. The physiology of action in the muscle is totally calcium dependent. We can appreciate that muscle is big Zero without calcium and calcium is big Zero without vitamin D. As such Charaka has rightly said on the theory of Mansavaha Srotas. Under Ayurvedic practices Snehan, Swedan, Abhyanga, Avagahana, Alepan, Udvartana etc. are all done based on Twacha, which covers 75% of Panchakarma discipline. Similarly like for a person aspiring to be a surgeon a perfect knowledge of cadaver anatomy is essential, the perfect knowledge of the structure and function of skin for Panchakarma expert is essential.



The basic function of skin is the physical protection, until the regularity of the skin is not ruptured, nothing can enter from external environment. Skin makes barrier

against bacterias. Open injury is vulnerable to infections. Keratin, protein synthesized by the keratinocytes of the epidermis is one type of structural protein with sulfur as an essential constituent, functions for developing resistance against infections. Protection from UV rays is an important function of the skin. Melanin, a protein synthesized by the melanocytes located in the basal layer of the epidermis, functions to absorb the UV rays, so that the underlying cells are secured. Skin also functions for the removal of wastes from the body, like kidney. It removes urea, ammonia and CO₂ from the body to maintain homeostasis. Skin also plays important role in keeping acid and base in balance, through the excretion of urea CO₂ and other acidogenic factors it restores the body with normal pH. Skin is one type of sensory organ, it functions as a touch sensory to identify the physical changes in the external environment e.g., pressure, temperature etc. Skin also functions for the synthesis of vitamin D. Thermoregulation is an important function of skin. During winter and in cold environment, erection of hairs and reduction of surface area are the two changes that are seen in the skin to protect body from cold. By the process of sweating and increase of surface area skin protects body from hot climate. Sweating leads to diffusion of heat from the body keeping us comfortable.

Ayurvedic Sharir Siddhanta

Acharya Sushruta, the father of surgery has very well elaborated the theory and the anatomy of skin under the heading of Sharir Garbha Vyakarana. Under this presentation he has devised the theory of the development of skin (Twacha) firstly, and then presented the anatomy of skin.

Sushruta says that Twacha (skin) is developed like the milk membrane developed at the surface of boiled milk, in chronological order for the making of layers. Further he has presented that skin has 7 layers, i.e. Avabhasini, Lohita, Sweta, Tamra, Vedini, Rohini, Mansadhara Twacha. These layers of Twacha are analogous with the layers of epidermis, dermis and hypodermis. Anatomical correlation can be appreciated as under:-

1. Avabhasini - Stratum corneum (1/18 Brihi)
2. Lohita - Stratum lucidum (1/16 Brihi)
3. Sweta - Stratum granulosum (1/12 Brihi)
4. Tamra - Stratum germinosum (1/8 Brihi)
5. Vedini - Papillary layer (1/5 Brihi)

*** Professor & **Lecturer Deptt. of Rachna Sharir, GJ Patel Ayu. College & Reseach Centre, Anand (Guj) 388121**
***** R.M.O. Omkar Hospital, Laxmi Nagar, Jaipur, Rajasthan**

6. Rohini - Reticular layer (1 Brihi)**7. Mansadhara Twacha - Hypodermis (2Brihi)****Clinical Importance**

The functions of skin are not described clearly in Ayurveda. There is no independent description found in this regard. However the functions of skin is reflective in various references scattered in Samhitas. Acharya Charaka has presented the signs of Twaksar Purusha under Viman Sthan, which gives the information about the functions of various properties of Prakrat Twacha.

Acharya Charaka has said that the skin of Twakasar Purusha should be unctuous (Snigdha), smooth (Shlakshna), soft (Mradu), clean/glorious (Prasanna), fine (sukshma), close/not loose (Alpa), thick (Gambhir), soft hairy (Sukumar Loma) and radiant (Saprabha). This type of Twaksarata gives the indication of happiness, prosperity, splendor, pleasure, intelligence, knowledge, health, contentment and longevity.

As such skin is reflective for the internal state of a person. If skin is healthy likely the other systems of the body will be healthy. The symptoms of the sickness of other systems will be reflected on the skin. So that if skin is treated this will benefit to the health of other systems also. This has caused the development of various therapies under Panchakarma system of medicine.

According to Sushruta, skin is the seat of Bhrajak Pitta, accordingly because of Bhrajak Pitta skin functions to catalyze the metabolic process related with the therapies of Abhyanga, Parisheka, Avagah, Alepan, Udvartan etc.

Skin is grossly an organ with ectodermal origin alike nervous system. All the sensory organs have the same type of developmental basis. Because nervous system is evolved to ensure the survival of organism against the changes falling in the internal and external environments. This is why the organs helping any way, for the cause of protection of organism are derived from ectoderm. As such skin is the gate way of person and personality. Ancient Ayurvedic sages were high visionaries, so they could see that if skin is treated and strengthened, with the good health of skin the whole body will be benefited and good health will be ensured. This has given rise to the development of Snehana, Swedan, Udvartan and Avagahan type of therapies.

Acharya Sharangdhar has referred that the healthy skin benefits to the wisdom, knowledge and health in particular, while giving directions on the functions of Pitta, he has given the specific direction.

In this reference Kantikaratva of skin holds many meanings, it directly refers to every type of anabolic activities in the body including synthesis of protein lipid and glycogen and hemoglobin. These substances reflect in the skin. As skin synthesizes the vitamin D, which is

almost an anabolic vitamin. Beneficial

role of vitamin D in the treatment of diseases like autoimmune illness, cancer, chronic pain, diabetes, heart disease, hyperparathyroidism, hypertension, mental illness, multiple sclerosis, muscle weakness and co-ordination, obesity, osteoarthritis is a valuable material in this regard. Functions of vitamin D can not be over looked at this point. Vita. D is a fat soluble vitamin. Vitamin D is a growth vitamin. It is an anabolic and is also known as anti ageing vitamin. It is more synthesized in white skin because of the higher transparency of white skin people for sun rays. This is why the white skin community is advantageous and physically dominating, globally in comparison with black skin. Vitamin D helps in the absorption of calcium. It functions in the metabolism of calcium and phosphorus equally. Vita. D functions for assimilation and deposition of calcium in the bones. This is amazing how Acharya Sharangdhar had foreseen about the role of skin in promotion of knowledge and wisdom. Normally it is not believable, but present studies on vit. D have done such miracles force suggest us to believe on this. Present studies say that vita. D helps in many ways in promoting intellectual health. It helps in the early development of brain. It helps in maintaining and developing cognitive function. It helps in protecting neurons from degeneration and preventing inflammation. It's deficiency may lead to many diseases e.g., dementia, Alzheimer's and Parkinsonism. Since Vita. D is synthesized from the skin therefore it is very much truthful to appreciate this.

Skin being an Adhishtan for Abhyangadi therapies, it is referred that medicines used in such local therapies are absorbed through skin. Skin is also a known route of administration of drugs. Pancha Karma and allied therapies are unique therapies in Ayurveda, credit for the development of such therapies goes to the knowledge of the functional importance of skin.

Conclusion

Skin is a very important basic structure of the body. Other than its physical values it holds metabolic, behavioral, mental, psychological as well as therapeutic values. Skin is also an important basic component of personality building. As such the due biological knowledge of skin, must be essential for the clinicians dealing with Pancha Karma, physiotherapy, cosmetology, sports, physical education and performing art. In Ayurveda if it was not the subject of Pancha Karma half of the value of medicine was lost, alike Shalyavishayardhata of Marma Sharir. People particularly of Ayurveda should give more emphasis on the study and research in the respective areas of Twaka Sharir to ensure true scientific knowledge about the structure and function of skin.

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Cardiac Disorders and Rasayana Therapy

Dr. Harbans Singh (MD, Ph.D.)

The physical health of the body is chiefly determined by the kind of nutrition one receives and to supply this nutrition to the body is the work of the heart. Clearly, the phrase "Hale and Heartly" has been used since long to describe a healthy person. As health of body depends on the condition and functional status of the heart, health of the heart is thus a major concern. "A healthy body is where a healthy mind is". Thus health of heart is growing concern now-a-days. Studies conducted by various organizations reveal that cardiac disorders affect approximately 50 million people in the United States and approximately one billion people worldwide per year and as population ages, the prevalence of cardiac disorders will increase even further unless broad and effective preventive measures are implemented. Also cardiac ailments are the major cause of morbidity worldwide with almost equal distribution in both developed and under-developed countries. This fact further emphasizes the concern regarding cardiac health. How much important is this fist shaped mass of muscles located in the chest can thus be understood. In the present world, the incidence of cardiac ailments has significantly increased. Various factors can be attributed to this, of which one of the major factors is 'Stress', which accounts for nearly fifty percent of all cases. With the advancement of our country and adoption of new lifestyle, materialization of society has occurred. And to meet demands of higher standards of living and competitiveness the level of material gains has increased but in terms of mental satisfaction, it has greatly deteriorated. This increasing stress has given birth to commonest cardiac disorder which is hypertension', the root cause of all cardiac ailments, The "Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure" reports that even normotensive individuals at the age of fifty five have a ninety percent life time risk for developing hypertension, while as in persons older than 50 years, systolic blood pressure greater than 140 mm Hg is much more important risk factor for cardiovascular disease (CVD) than diastolic blood pressure. It further states that most patients with hypertension will require two or more anti hypertensive drugs to achieve goal blood pressure (<140/90 mm Hg or <130/80 mm Hg for patients with diabetes or chronic kidney diseases) the relationship between blood pressure and risk of CVD events is continuous, consistent and independent of other risks factors; the higher the blood pressure, the greater is the

chance of IHD (heart attack), heart failure, cerebrovascular accidents (CVA) and renal disorders. Of these, ischemic heart diseases (IHD) are the most common, form of target organ damage associated with hypertension.

Next to stress, the second commonest cause leading to heart ailments is change in the lifestyle. With the adoption of western lifestyles in our country, significant changes in dietary habits have occurred leading to diabetes mellitus hyperlipidemia, both of which are concomitant with occurrence of coronary artery diseases. Individuals with a positive family history of these disorders are predisposed to a greater risk of developing cardiac disorders and associated CVA's.

But in today's perspective, if we view minutely, we can conclude that stress and lifestyle changes are an inseparable and inevitable part of development and civilized growth. And this is the main reason why anti-hypertensive's and other drugs given to cardiac patients just maintain a state of equilibrium for a while before their dose has to be increased or they have to be used in combination of two or three drugs. That is, they are just a form of symptomatic treatment and are not anti-etiological or pathophysiological. This is one of the major facts behind the growing number of cardiac mortalities per year and this is the reason why the search for cardioprotective agents is still on in this highly developed world.

Since pharmacological therapy is bound to fail at sometime or other, non-pharmacological therapy is now being emphasized on. If we view Ayurvedic literature, we find that many disorders described thousands of years ago by ancient sages are prevalent today. But there is no clear mention of cardiac disorders as a whole, though symptomatology of hypertension, dyslipidaemias and related cardiac disorders can be found scattered in parts. One of the main reasons behind this as adjudged by various scholars is that, may be these were not prevalent in those days. The reason behind this is not clearly identified.

One reason behind this can be that the first basic fundamental of Ayurveda is to prevent the occurrence of disease in the body. For this two methodologies have been described. The first is to follow the "Sadvritha" and "Aachar Rasayana" and second is the use of Rasayana drugs (rejuvenative therapy).

*Research Officer (Ayu), Herbal Ayurveda Research Centre,
Nagaland University, Lumami, Distt. Zunheboto (Nagaland) - 798627*

Sadvritta and Achar Rasayana

The practice of Sadvritta and Achar Rasayana ranges from following daily healthy routine of maintaining proper personal hygiene, relieving of natural urges at proper times and eating healthy food at right time to inculcating good personal habits and following simple rules in one's social and moral behavior. Simple it may sound, but viewing from a wider perspective, one can conclude that one is maximally happy and contented when he himself and his surroundings are clean and he is eating hygienically prepared food at right time. Nothing else can provide mental satisfaction as much as this.

Achar Rasayana is essentially a non-pharmacological approach to social and mental health care leading in turn to positive health and longevity. Low fat diet, regular physical exercise, cessation of smoking and mental relaxation through meditation and yoga have been reported to result in regression and prevention of atherosclerosis, the process that results in narrowing of coronary arteries (Heart attacks) brain blood vessels (strokes). Aasans (Yogic postures) bring a positive catalytic effect in the outcome of this holistic approach of Yoga to achieve positive health in general and heart care in particular. Several scientific studies conducted to evaluate the effects of Yoga and meditation on cardiovascular and respiratory system have revealed clinical improvement and significant positive alteration in the biochemical parameters like plasma cortisol, catechol and indole amines, lactic acid metabolites etc. EEG studies have revealed accentuation of alpha and beta

waves in subjects practicing Yoga.

Vyayama (physical exercise) is associated with significant reduction in serum triglycerides and increase in serum HDL cholesterol. Exercise also helps in reducing weight, improving insulin sensitivity. The Rasayana (Rejuvenative) therapy: It is primarily aimed at providing good quality nutrition to the body so that a healthy body emerges which can stand well against both physical and mental stress. In Charak Samhita (600BC) various Rasayana drugs have been described like Brahmi (*Bacopa monnieri*), Shankpushpi (*Convolvulus pluricaulis*), Guduchi (*Tinospora cordifolia*) Madhuyasti (*Glycyrrhiza glabra*), Pippali (*Piper longum*), Vidanga (*Embelia ribes*), Bala (*Sida cordifolia*), Bhallataka (*Semecarpus anacardium*), etc. along with their methods of preparations and uses. Studies conducted at various National Institutes have shown that these Rasayana drugs especially Medhya Rasayana drug decrease the level of catecholamines in the body and produce tranquility of mind. These agents can be used in the form of tranquilizers, anxiolytic and adaptogenic agents.

Thus, they help to increase one's ability to cope with present day circumstances and stressful life efficiently. Ayurveda has, therefore, since long described these simple but very effective measures which if one practices can certainly alleviate stress in our lives and thereby, the risk of heart ailments. Practice of these therapies will certainly lead to physical, mental and spiritual development of the individual and hence a healthy body and a healthy mind.



"On the up side, you're the healthiest patient on ICU."

Metabolic Syndrome and Healthy Lifestyle

***Dr. Suryanshu Dutt Sharma**

****Dr. Y.K.Sharma**

India, accounting for population of over a billion humans, is known world wide for its cultural, ethical and civilization assets. But lately it has been known world wide for highest incidence of tuberculosis with 3,30,000 deaths annually, HIV infection with over 1.5 million infected people, Diabetes mellitus with 50 million patients, Hypertension with over 70 million patients and that it has major share of other metabolic ailments. One of the important factors responsible for high graph of middle age sickness is poor metabolic health of Indians, popularly known these days as “Metabolic Syndrome”.

Metabolic syndrome, also known as Syndrome X, is the name for a group of risk factors linked to overweight and obesity that increase the chance for heart diseases and other health problems such as diabetes and stroke. Metabolic syndrome is a result of modern lifestyle choices: eating wrong amount and wrong types of foods, not exercising and having too much stress in life. The diagnosis of metabolic syndrome is based on the results of a physical examination and blood tests. To be diagnosed with metabolic syndrome, one must have at least three out of five of the following risk factors (According to IDF):

1. A large waistline means carrying excess weight around waist (abdominal obesity). A waist measurement of 35 inches or more for women and 40 inches or more for men is a component of metabolic syndrome and indicates an increased risk for heart disease and other health problems. A large waistline also called “having an apple shaped obesity or body” If someone is having BMI > 30kg/sq.m., central obesity is assumed & waist circumference does not need to be measured.
2. A higher than normal triglyceride level, or on medicine to treat high triglycerides. A triglyceride level of 150 mg/dL or higher is a component of metabolic syndrome.
3. A lower than normal level of HDL cholesterol (high-density lipoprotein cholesterol), HDL is considered “good” cholesterol because it lowers chances of heart disease. An HDL cholesterol level less than 50 mg/dL for women and less than 40 mg/dL for men is a component of metabolic syndrome.
4. Higher than normal blood pressure, or on antihypertensive medicine. A blood pressure of 130/85 or higher is a component of metabolic syndrome.

If only one component out of two blood pressure numbers is high, it's still a risk factor for metabolic syndrome.

5. Higher than normal fasting blood sugar (glucose), or on hypoglycemic medication. A normal fasting blood sugar is less than 100 mg/dl. Fasting blood sugar between 100 and 125 mg/dl is considered pre-diabetes. Fasting blood sugar of 126 mg/dl or higher is considered diabetes. A fasting blood sugar of 100 mg/dl or higher (pre-diabetes or diabetes) is a component of metabolic syndrome.

About 85 percent of people who have Type II Diabetes (The most common type) also have metabolic syndrome. These people have a much higher risk for heart disease than the 15 percent of people who have Type II Diabetes, but don't have metabolic syndrome.

What Causes Metabolic Syndrome?

Metabolic syndrome has several causes that act together. Some can be controlled, while others can't. Factors that can be controlled include overweight and obesity, lack of physical activity, and insulin resistance. Non modifiable factors or etiology of metabolic syndrome are old age and genetics. Chance of developing Metabolic Syndrome increases with age. Your genes can increase your chances of developing insulin resistance, which can lead to metabolic syndrome, even if you have only a little extra weight around your waist.

Two other conditions are often found in people with metabolic syndrome, although it's not known if they cause it or worsen it. These are a tendency to form blood clots and a tendency to have a constant, low-grade inflammation throughout the body. Additional conditions that are being studied to see whether they have links to metabolic syndrome include:

1. Fatty liver (excess triglycerides and other fats in the liver)
2. Polycystic ovarian syndrome (a tendency to develop cysts on the ovaries)
3. Gallstones
4. Breathing problems during sleep such as sleep apnea

Who is at Risk for Metabolic Syndrome?

One is at greatest risk for metabolic syndrome if he is having underlying causes:

1. A large waistline (abdominal obesity)
2. Lack of physical activity

*** MD (Kayachikitsa) Scholar, **HOD, P.G. Department of Kayachikitsa,
Rajiv Gandhi Govt. Post Graduate Ayurvedic College, Paprola, (HP).**

3. Insulin resistance

Some people are at risk for metabolic syndrome because the medicines they take may cause weight gain or changes in blood pressure, cholesterol, and blood sugar levels. These medicines are most often used for inflammation, allergies, HIV, depression and mental illnesses.

Other groups that are at increased risk of developing metabolic syndrome include:

1. People with a sibling or parent with diabetes.
2. People with a personal history of diabetes.
3. Women with a personal history of polycystic ovarian syndrome (a tendency to develop cysts on the ovaries)

In addition, members of certain ethnic groups are at increased risk for metabolic syndrome. For example, South Asians have an increased risk for metabolic syndrome.

Signs and Symptoms:-

Metabolic syndrome is made up of a group of factors that can increase risk even if they are only moderately raised (borderline-high risk factors). Metabolic syndrome itself usually has no symptoms. Most of the risk factors linked to metabolic syndrome have no signs or symptoms, although a large waistline is a visible sign. Some people may have symptoms of high blood sugar (if diabetes is present) or, occasionally, high blood pressure. Symptoms of high blood sugar often include increased thirst; increased urination, especially at night; fatigue (tiredness); and blurred vision. High blood pressure is generally considered to have no signs or symptoms. However, a few people in the early stages of high blood pressure may have dull headaches, dizzy spells, or more nosebleeds than usual.

Management:-

Healthy lifestyle changes are the first line of treatment for metabolic syndrome. Lifestyle changes include weight loss, increased physical activity, an improved diet, and quitting smoking. Medicines are the next line of treatment. They're used to treat and control individual risk factors such as high blood pressure, high triglycerides, low HDL cholesterol (high-density lipoprotein cholesterol), and high blood sugar. Medicines such as aspirin also may be used to reduce the risk of blood clots, a condition that often occurs with metabolic syndrome.

Goals of Treatment:-

The major goal of treating metabolic syndrome is to reduce a person's risk for heart disease. Treatment is directed first at reducing LDL cholesterol (low-density lipoprotein cholesterol), high blood pressure, and diabetes (if these conditions are present). The second goal of treatment is to prevent the onset of Type II Diabetes (If it hasn't already developed). Long-term

complications of diabetes often include heart and kidney disease, vision loss, and foot or leg amputation. If diabetes is present, the goal of treatment is to reduce the increased risk for heart disease by controlling all of the risk factors. The main emphasis in the treatment of metabolic syndrome is to lessen the effects of the underlying risk factors that can be controlled, such as overweight, lack of physical activity and an unhealthy diet.

Life Style Modification

Weight Loss: - In general, people with metabolic syndrome who are overweight or obese are urged to reduce their weight by 7 to 10 percent during the first year of treatment. For example, a person weighing 100kg should try to lose 7 to 10 kg. After the first year, people are urged to continue to lose weight to the extent possible, with a long-range target of lowering their body mass index (BMI) to less than 25. BMI measures weight in relation to height and gives an estimate of total body fat. A BMI between 25 and 29.9 is considered overweight. A BMI of 30 or more is considered obese. A BMI of less than 25 is the goal for prevention and treatment of metabolic syndrome.

Healthy Eating Plan: - A heart healthy diet is an important part of a healthy lifestyle. A healthy diet includes a variety of vegetables and fruits. These foods can be fresh, canned, frozen, or dried. A good rule is to try to fill half of your plate with vegetables and fruits.

Less than 7 percent of daily calories should come from saturated fat, and no more than 25 to 35 percent of daily calories should come from all fats, including saturated, trans, monounsaturated, and polyunsaturated fats. One also should consume less than 200 mg a day of cholesterol. The amounts of fat and cholesterol in prepared foods can be found on the food's nutritional label.

Foods high in soluble fiber also are part of a healthy eating plan. These foods include:

1. Whole grain cereals such as oatmeal and oat bran.
2. Fruits such as apples, bananas, oranges, pears, and prunes.
3. Legumes such as kidney beans, lentils, chick peas, black-eyed peas, and lima beans.

Fish are an important part of a heart healthy diet. Fish are a good source of omega-3 fatty acids, which may help protect the heart from blood clots and inflammation and reduce the risk for heart attack.

Try to avoid foods and drinks that are high in added sugars, similarly efforts should be made to limit intake of salt and sodium. Drinking water instead of sugary drinks, such as soda reduces intake of calories and chemicals. Try to limit alcoholic beverages. Too much alcohol will raise blood pressure and triglyceride level. It will also add extra calories, which will cause weight gain. Men should not have more than two drinks of alcohol a day. Women should have no more than one

drink of alcohol a day.

Aim for a healthy weight by staying within your daily calorie needs. Balance the calories you take in from food and drinks with the calories you use while doing physical activity.

Increased Physical Activity: - The four main types of physical activity are aerobic, muscle-strengthening, bone strengthening, and stretching. In general, people with metabolic syndrome are urged to keep up a moderate level of activity, such as brisk walking for at least 30 minutes at least 5 days of the week. This activity can be broken into shorter periods as needed for example, three 10-minutes sessions.

The ultimate goal for people is to maintain a moderate level of physical activity, 60 minutes a day for 5 days a week, but preferably daily.

Smoking: - Quitting smoking is important. Among other known harmful effects on heart, smoking will raise triglyceride level and lower HDL cholesterol.

Medicines: - Medicines are recommended to help treat unhealthy cholesterol levels, high blood pressure and high blood sugar. Unhealthy cholesterol levels are treated by one or more cholesterol-lowering medicines such as statins, fibrates, or nicotinic acid.

High blood pressure is treated by one or more antihypertensive medicines such as diuretics or angiotensin-converting enzyme (ACE) inhibitors. High blood sugar is treated with oral medicines, insulin injections, or both. Low-dose aspirin can help reduce the risk of forming blood clots, especially for people at high risk for heart disease.

Prevention:-

Making healthy lifestyle choices is the best way to prevent metabolic syndrome. Maintaining a healthy weight is important. Other than weighing on a scale, there are two ways to know whether you're at a healthy weight: waist measurement and body mass index (BMI).

A waist measurement indicates abdominal fat and is linked to risk for heart disease and other diseases. A waist measurement of less than 35 inches for women and less than 40 inches for men is the goal for preventing metabolic syndrome; it's also the goal when treating metabolic syndrome.

BMI measures weight in relation to height and provides an estimate of total body fat. A BMI between 25 and 29.9 is considered overweight. A BMI of 30 or more is considered obese. A BMI of less than 25 is the goal for preventing metabolic syndrome, and it's also the goal when treating metabolic syndrome.

$$\text{BMI} = \text{Weight (kg)} / \text{Height in mt.}^2$$

To maintain a healthy weight, follow a healthy eating plan and try not to overeat. This means eating fewer calories and less saturated fat, and emphasizing whole grains, fish, and fruits and vegetables. Choose unsaturated fats when eating fats and oils such as canola, olive, or safflower oils, soft or liquid margarine and nuts.

Increasing your physical activity also can help you maintain a healthy weight. If you're medically able, get at least 30 minutes of moderate activity, such as brisk walking, at least 5 days a week. Work up to getting 60 minutes of moderate activity 5 to 7 days a week.

Make sure to schedule regular doctor visits to keep track of cholesterol, blood pressure, and blood sugar levels.

Final Words:-

Metabolic syndrome is a precursor of major killer diseases of young age like Diabetes Mellitus, Coronary Artery Disease, Hypertension, Osteoarthritis etc. It can be diagnosed before it establishes its pathologies in body. Short stature, increased waist circumference, high BMI during early adult life should warn one of impending Metabolic Syndrome. This is the time that one corrects his life style to ward off Metabolic Syndrome related ailments. People with genetic tendencies should be extra cautious.

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Science of Water Consumption in Ayurveda

***Dr. Swati Rahangdale**

****Dr. Pranit Ambulkar**

Abstract

Superficially thinking subject of drinking water appears nothing scientific. But when we go through its details it is not only a matter of scientific importance but also it plays important role in maintaining good health of an individual. In Ayurveda, drinking water is considered as medicine in some disease condition whereas in some conditions it is stated harmful for health. Improper way of drinking water leads to formation of various complicated diseases. Physical properties like temperature and amount also have importance. Also boiling water, to reduce it in different proportions incorporates different therapeutic values to it. This way Ayurveda describes the science of drinking water and same is briefly reviewed in this article.

In our busy lives we give a little thought to the water we consume during the whole day. Ayurveda, the science of life, highlights even very little things involved in our day to day life. Acharya Vagbhata has described in the text Ashtang Sangraha the indication of water to be drunk the whole day. In Ayurvedic texts there is an ample description of when, how and what amount of water should be drunk. In which diseases water is contraindicated, and which diseases it is advised to drink ample amount of water. Let's take a review on important details related to drinking water described in ayurveda.

***Ajirne bhesajam waari jirne waari balapradam
Bhojanae chaamrutam waari bhojanante vishapradam
Vai. Su.***

In Ajirna i.e. indigestion water acts like medicine. Water taken after digestion of food gives strength to the body. Water taken with/during meals is like nectar and if the water is taken after meals it acts like poison. On indigestion Ayurvedists advise lukewarm water. Lukewarm water has *Amapachana* properties. Lukewarm water removes obstruction of Ama which then allows smooth flow of digestive juices in the ingested food. Warm water is good medicine of vitiated Vata, it helps in *Vata-anulomana*, which relieves gastric pain in indigestion.

When water is taken after food is digested i.e. after 2-3 hour of meals, it helps in body fluid balance. It helps in cleansing of digestive system and prevents accumulation of toxins. As the fluid balance is maintained it facilitates smooth functioning of body cells. This maintains balance of all types of *agnis* (*Agni* literally means fire, Here it is symbolic of the digestive power, *Agni* is of 13 types. 13 types of *agnis* can be compared with different types of metabolisms), balance of *tridoshas* resulting in uniform production of 7 *dhatu*s

(7 *dhatu*s constitute the body namely, *Rasa Rakta Mansa Meda Asthi Majja*, and *Shukra*, i.e. Plasma, whole blood, Muscles, Fatty tissues, Bones, Bone marrow and seminal secretions respectively). These together provide a good constitution and strength to the body. During meals balanced water intake plays key role in digestion of food. In between water intake helps saliva to mix with the food we chew. It helps in uniform mixing of digestive juices with the food. It creates space for the doshas during digestion during 3 Awasthapakas (*Madhur-Amla-katu-Awasthapaka* are three stages of digestion according to 3 doshas kapha-pitta and vata respectively). Regular practice of this maintains balance of dosha, dhatu and agni. When this balance is attained it improves immunity of body. The basal metabolic rate is well maintained. This prevents and protects body from infections and seasonal variations. Hence it leads to healthy and long life.

When a large amount of water is taken immediately after meals it leads to dilution of digestive juices causing indigestion, acidity, and other chronic complaints related to Digestive system. When this habit becomes chronic it leads to *agnimandya* (decreased digestive power), *Grahani* (chronic diarrhea), *arsha* (piles), *udar* (ascites), skin disorders and chronic systemic disorders which is like a silent killer. Hence drinking water immediately after meals is compared with poison.

The above verse describes relation of water and food precisely. Let's see some more info on water intake and its effects according to type of water, health and weather perspectives.

1. Indication of warm water

a) Seasonal- In rainy season, physiologically according to Ayurveda, *Agni* and *Bala* (strength) of body become weak. Hence, we feel that our diet has become less. It is season of aggravation of vata, hence problems of flatulation, dyspepsia, constipation aggravation of joint

****M.D. (Rasa), Consultant Physician & Ayurvedic Pharmacist. **Ph.D. (Rasa) Scholar,
National Institute of Ayurveda, Jaipur.***

pain is commonly in this season. The intake of warm water averts vata and gives relief in vata problems. Ordinary cold water should be taken in all other seasons.

- b) Physiological- for kapha and vata prakriti in the morning, after ingestion of unctuous and heavy meals, adults aging above 60 yr. As per Sushruta Samhita if water is boiled to reduce one quarter it destroys vitiated Vata, if reduced to half, it destroys vitiated Pitta and if reduced to remain $\frac{1}{4}$ it destroys vitiated Kapha. It also ignites the digestive Agni and acts as Dipana.
- c) Clinical- In *Ajirna* i.e. indigestion, *Ama* (improperly digested food juice) conditions like fever, Atisar (diarrhea), *Amavata*, joint pains, obesity, piles (exception-bleeding piles) Kapha and vata diseases, also warm water depletes Kapha, acts as diuretic and clears urine flow through kidneys, ureters and bladder.

2. Indication of Cold Water

- a) Seasonal-Grishma ritu i.e in summer season cold water should be taken along with salts and sugar, in form of Sharbats, Amra Panaka, jaljeera, Hima of different herbs etc. Plain water should be kept with coarsely powdered herbs like Ushira, Khus, Chandana (Shweta), and Musta in earthen pot this water should be drunken in summer season. In *sharad ritu* (season between rainy season and winter i.e. September October -November) ordinary cold water should be taken to avoid Pitta disorders mainly urinary and allergic disorders. Persons having pitta prakriti and above mentioned disorders should take liberal amount of water in this season.
- b) Physiological-Pitta prakriti (constitution) persons should drink cold water stored in new earthen pot.
- c) Clinical- Abhyantar Daha (burning sensation), Bhrama (vertigo), Murccha (dizziness), sunstrokes, heat strokes. Also cold water is considered best for Ashwasana. Means it settles down fear or anxiety of the mind and makes patient feel calm.

3. Seasonal Intake of Water.

Water boiled and reduced to desired level is recommended by Sushruta Samhita in different seasons. This water may be brought to normal temperature where cold water is recommended.

- In Sharada Ritu $\frac{1}{8}$ reduced water is recommended.
- In Hemanta Ritu $\frac{1}{4}$ water should be reduced by boiling.
- In Shishira, Vasanta, and Grishma Ritu $\frac{3}{4}$ water should be evaporated.
- In Varsha Ritu water should be reduced to $\frac{1}{8}$ of its original volume.

4. Normal Intake of Water

- After having sound sleep, get up early in the morning and drink 1-2 glass of lukewarm water.
- If you feel thirsty, take care that water should not be drunken 1 hr before and 2 hrs after meals or eating anything.
- Do not drink water immediately before and after urge of micturition or defecation. Also one should not drink cold water immediately after bathing also.
- Drink little sips of water while eating; avoid drinking water after juices and beverages e.g. cold water before or after tea, coffee and milk. In dental problems, gargling with lukewarm water can be done.
- Don't drink water immediately after heavy exercises, running etc. Avoid drinking chilled water after outings in sun especially in summer.
- Drink water throughout the day up to 2 to 2.5 L at regular intervals.
- Avoid drinking water when you are too much hungry.
- Amount of water to be drunk should be decided keeping in mind your body constitution, health status and season. If suffering from certain disease consult your Ayurvedic physician regarding amount and type of water to be drunk.
- Avoid drinking water stored for a long time in a vessel or container. Also water stored in plastic container over three months.
- Don't drink ice-cold water in any season or any condition. This type of water decreases internal body temp abruptly which causes aggravation of vata and *Mandagni*.
- One should not use reheated water. The water that is once boiled and cooled if reheated vitiates all three Doshas.
- One should not cover the water during boiling. The water condensed on lid falls and mixes with boiling water making it hard to digest. Thus consumption of such water causes indigestion, constipation and Vata prakopa.
- Excessive intake of water in night causes increase in rasa that does not digest properly. It causes *Ajirna* and *Dosha* are vitiated.

5. Factors affecting Water Intake

Fast food increases too much thirst leading to excessive drinking of water. Excessive drinking of water causes *Mandagni*. It is root cause of maximum number of disorders like Acidity, Indigestion, dyspepsia, disorders like anorexia. Normally, in winter season water intake decreases, due to cold weather. And in rainy season it decreases due to extra moisture in environment. If it decreases below normal it is advisable to drink lukewarm water.

There are also references in Ayurvedic text which describe the properties of different types of water in different types of soils and resources. Also a person living in a particular region becomes habitual of the water in that region, so traveling into completely different region may lead to constipation, indigestion and minor health problems due to intake of that water. At that time before taking any medicine wait for 2 or 3 days to habituate, if the condition aggravates only then try medical consultation.

At the end of this note I would say, try to listen to and understand your body natural demands, Ayurveda is

science of life, it heals human mind, body and soul, and diseases are automatically healed!!!

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*"How would you like to pay?
Over the counter or over the odds?"*

Rasayana for Healthy Aging

Dr. R.K. Pareek (M.D., Ph.D.)

In India today, life expectancy is 65 years for women and 64 years for Men. Today we are living longer and we want to spend these added years in good health. At the same time, the desire to be attractive and lovable does not diminish with age. Here, I present sciences and formulae fight against process. There are 2 major school of thoughts regarding aging process, the genetic school and the free radical school. The theory of mitochondria damage falls in to the free radicals school.

Does it really matter at this point what the actual cause or causes are? Yes, it does, because prevention & treatment will be based on the new knowledge.

The best science can offer now is to slow down the speed of aging. We can not prevent aging changes, but the process of aging can be slowed considerably and at

times some of the changes actually reversed. We need to combine ancient Ayurvedic rasayanas herbal remedies with yogic fitness and natural nutrition.

Rasayan is an Ayurvedic specialty to deal with psychosomatic disorders of old age. It plays pivotal role in the delaying of degenerative diseases and delay of death. In Ayurveda, it has been clearly mentioned that human life can be divided in to ten decades. It means human life span can be of hundred years. Acharya **VAGBHATTA** and **SHARANG DHAR** have presented an interesting scheme of loss of different biological factors as function of aging during different decades of life in a sequence. As a person becomes old, biological functions are changed both by diseases and by the process of ageing.

Decades	Years	Factors lost at the end of period	
		Acc to VAGBHATTA	Acc to SHARANDHAR
First	00-10	Balya (Infancy)	Balya
Second	11-20	Vridhi (Growth)	Vridhi
Third	21-30	Prabha (Lusture)	Chhavi (Lusture)
Fourth	31-40	Medha (Intellect)	Medha
Fifth	41-50	Twak (Skin Health)	Twak
Sixth	51-60	Sukra (Sexual ability)	Drishti (Vision)
Seventh	61-70	Drishti (Vision)	<i>Sukra</i> (Sexual ability)
Eighth	71-80	Srotrendriya (Hearing)	Vikram (Strength)
Ninth	81-90	Manah (Psyche)	Buddhi (wisdom)
Tenth	91-100	Sparshendriyas Psychomotor functions	Karmendriyas (Locomotor functions)

Consequently gradual degeneration of tissue occurs. “CHARAK’ & SUSHRUTA” both are of opinion that predominance of “VAYIJ” in the old age and decrease of “KAFA” and “PITA” is the cause of many kinds of psychosomatic disorders of the old age. Due to Predominance of “VAYU” in the Body, the Body tissues (Seven Dhatus) are decreased and Agni (Enzyme System) becomes weak, sense organs memory. Speech and knowledge. As a result degeneration is continued to the last breath. To avert all such maladies, Ayurveda recommends, strongly, the use of RASAYANA. The Rasayana treatment has to be applied in a systematic way. First of all, the metabolic toxins accumulated in various stratus should be excreted through

PANCHKARMA procedure therapy according to Psychosomatic condition of the patients. Another important point is that Rasayana administration must be started before onset of Aging.

“Purvayasi M̐ya Rasayanam vit sevanam”)

Ast. Hard UT 39-3).

Here, the word purvavyasi has significant meaning young age is Purvavaya (former age) for young age, infancy is a former age for childhood, which is former age for young age.

Promoting removal of Genetic Disorders

Above interpretation clearly demonstrates the classical application of “Rasayana” is not limited to psychoso-

*Professor & H.O.D., Department of Kaya Chikitsa,
Shri Krishna Govt. Ayurvedic College, Kurukshetra*

matic disorder of the old age, but hereditary and congenital Maladies also can be prevented by Rasayana Treatment. It is considered to be “VAYASTHAPANA” (Promoting Survival). In Fact, Rasayana is the action (Cause) and the result (effect). The Drugs Godanthi, Haritaki, Amalki, Rasana, Aparajita, Satavari, Mandookparni, Salparni, Purnarnawa are used for “VAYASTHAPANA” (CHARAKA SAMHITA 4/18)

Many Metals (in biological ash Form) and minerals are used for this purpose. They may be used either in the form of compound molecules or as single dose. The

Rasayana drugs are popularly called RASAUSHADHI. Which may supplement the specific loss, according the depreciation of particular state of living during particular age. (decade).

Antiaging Rasayana Treatment

These are healthy aging treatment for a more youthful, Healthies toned skin, body and relaxed spirit, the holistic treatment includes fitness, appropriate nutrition, Stores Reduction along with Rasayana Supplement.

FOR FITNESS	NUTRITION	STRESS REDUCTION	EDUCATION
MUSCULAR STRENGTH BONE MASS FLEXIBILITY AND IMPROVING OPEPALL BODY COM POSITION	FRUIT JUICES SPROUTS CEREAL, SVITAMIN SUPPLIMENTS DIETARY SUPPLIMENTS	AYURVEDIC MESSAGE YOGIC CHAKRAS, BALANCING HERBAL STEAM BATH HYDROTHERAPY, SHIRODHARA & NASYA	LIFE STYLE MANAGEMENT

DECADE	SPECIFIC LDSS	RASAYANA DRUGS
1st	BALYA (Child hood)	Amalki, Guduchi, Brahmi, Madhuyasti, Rajat & Swana
2nd	VRIDDHI (Growth)	Lauha, Swarna-Rajat
3rd	CHHAVI	Haridra, Chandana, Swarna, Manjistha, Rajat, Mukta, Praval
4th	MEDHA (INTELLECT)	Brahmi, Vacha, Lauha, Swarna, Rajat
5th	DRISTI (VISION)	Triphala, Madhuyasthi, Lauha, Tamra
6th	SUKRA (SEX ABILITY)	Shilajatu, Satawari, Svarana, Trivanga

The observance of special diet and daily regimen is considered essential for the success of Rasayana treatment. Ayurvedic Herbs with Rasayana properties like Aswagandha, Amalaki, Guduchi, Brahmi, Pippli, Satawari, Guddwal, Bhallatak, Haritaki, Nagabala etc.

are recommended to be used as food supplements but herbal supplements. Must be used either in the fresh form as pure form and devoid of adulterations. Some of the Rasyana drugs are most popular and scientifically verified for multiple efficacy.

Evaluation of “Swasthasya Swasthya Rakshanam” Principle of Ayurveda

Dr Sutapa Chakraborty (M.D.)

Ayurveda the ancient medical system of India is as old as Vedas. The first reference of Ayurveda is obtained in 'Rigveda' and 'Atharva veda' two of the four principal Vedas of ancient India. Certain hymns of Rigveda have mentioned the Tridoshas. Sushrutacharya has already designated Ayurveda as an 'upanga' or a kind of subsection of 'Atharva veda'. “Veda”- literally means knowledge or jnana. It is also called “ Shruti” which means learning or recall only by hearing. Previously we have said that Ayurveda is also a part of Veda. It is that medical system which has come across generation to generation without any Institution and any publication; only by “ Gurushishya parampara” and “Tatvidasambhasha” which means seminar system. By this way till now it is a popular system of medicine. So we all have to consider its Potency.

Ayurveda has given first preference to preventive aspect of health in their classics. The primary section is thus known as swastha vritta (Regime for health), deals with daily routine (Dina charya), seasonal adaptation (Ritu charya) etc. Later part called “Atur vritta”, (Regime in disease), over a thousand diseases have been described, giving their etiology (Nidana), Predisposing signs (Purva Rupa), symptoms (Rupa), pathology (Etiopathogenesis or Samprapti) and of course their treatment (Chikitsa sutra & Medicines).

We can recall the quotation from “Upanishada” in chapter 5, comparing the body to a chariot, you should realize that a driver (intellect) will be of no use unless the wagon or chariot is in a good condition. Reins (mind) are not required for a broken chariot. A well functioning chariot may lead it's owner (the soul or the real self of an individual) toward any desired goal. Whether your goal is to enjoy life or the lives after , or to attain immortality by merging into universal soul. For all this keep your chariot in a good condition. Always remember always the “first priority of life is life itself”.

According to Ayurveda the body is :-

“Satwamatma shariramcha trayametad tridandavat
Lokastishthati samjogat tatra sarvam Pratishtitam”. .
(C. S. Su 1.46)

A living tripod on which the living world stands are made by Sattwa or Mind, Atma or Soul, and Sharira or Body.

And health or Swasthyavastha is defined as below-

“ Samadosha samagnischa samadhatu malakriya
prasannatmendriya manah swasthya ityavidhiyate”.

It means samadosha (vata,pitta and kapha) which maintains the body equilibrium; samagni (all the seven dhatwagni and five doshagni will be in equilibrium and gastric secretion will be appropriate); samadhatu (rasa raktadi all the dhatus will be in equal state); samamala (urine, stool and sweat should not be infected and their excretion will be appropriate and proportionally to the food habit) is the healthy state of the body.

The first priority of Ayurveda should be the “Desire to live”. One maintains good health by living a sensible life style and alleviating disorder. This path helps to maintain the vital power and achieve a long life. In all the Ayurvedic texts various diseases and their treatment are mentioned; but major importance is given to healthy lifestyle & diet.

In comparison to another medical systems ayurveda has given more importance to preventive principles than curative ones. Here I will discuss about that. There are so many chapters of Ayurveda that have given importance to disciplined life style and diet.

e.g. In Matrashitiya adhyaya (Caraka Samhita, Sutrasthana 5th chap); Tasyashitiya Adhyaya (Caraka Samhita, Sutrasthana 6th chap); Navegan dharaniya (Caraka Samhita, Sutrasthana 7th chap); Rasa vimana (Caraka Samhita, Vimana sthana, 1st chap); Trividha kukshiya vimana (Caraka Samhita, Vimanasthana , 3rd chap) etc.

The main aim of ayurveda treatment is :-

“Swasthyasya swasthya rakshanam aturasya vikara prashamanamcha”. (Caraka samhita, Sutrasthana 30.26)
Which means the main aim of Ayurvedic treatment is:
1. To maintain the health of healthy persons and
2. To eradicate the disease of diseased person.

Now a days if we take statistics of diseases, then we will see that, in the present days people are mostly suffering due to life style oriented diseases mainly, as for example, Diabetes, Obesity etc.

The treatment principles of these two diseases are mainly systematic life style & Systematic or planned diet. There is mention about some medicine also but

*Seniour Research Fellow (Ayu),
NRIBAS, Nehru Garden, Kothrud, Pune - 38 (Maharashtra)*

medicines have very little role to control these diseases. Prevention and treatment of both the diseases may be done only by maintaining an appropriate daily regime, disciplined seasonal lifestyle & diet according to the advice of Ayurvedic texts.

The Ayurvedic texts recommend the daily regime of individuals from the time of awakening, upto going to bed which is mentioned as “**Dinacharya**”. All the routine should be in daily set up programme. It includes from utthan or arising up from the bed at brahma-muhurta (Before 48 minutes to 4 am), and utility of dantadhavana (Brushing tooth & washing mouth), snana (Bathing), Tambul bhakshana (Chewing of betel nut with leaf), dhyana (Meditation), vyayama (Physical exercise), Bhojanapranali or foodhabit, Padukadharan (Use of shoe), chhatradharana (Use of umbrella etc, and contra indication of these in various diseases. Also mentioned about “**Ritucharya**” or seasonwise lifestyle, what should be done in which season and what should not be, in avoidance of these what disease may occur and about diet etc.

In Caraka Samhita Sutrasthana it is mentioned that “**Matrashisyat**” which means one should take food in appropriate quantity. The quantity depends on the power of digestion or agnibala. Whatever the food taken, should be got digested in proper time without disturbing the normalcy, should be regarded the as the measure of quantity provide strength, complexion and happy life to the person.

In this context in Caraka Samhita Vimanasthana, 3rd Chapter “**Trividha Kukshiya Vimana**”, it is mentioned that , one should take food in such a manner that one part should be filled by solid food, one part should be filled with liquid and one part should be left for Vata, Pitta & Kapha . This procedure helps in good digestion. Due to improper intake of food, many diseases may occur. In this context there are many Sanskrit terminologies are used to denote improper intake of food eg. Adhyashana- Causes Grahani roga, Viruddha viryashana causes kushtha roga, these all should be avoided. Ayurveda has also given importance to “**Viruddhahara**” to cause any disease. Which food combinations should not be taken at the same time, and what will be the bad effect of this.

According to Ayurveda, natural urges (mala, mutra, jrimbha, ashroo etc.) should not be suppressed, these are “**Adharaniya vega**”, due to suppression of these so many diseases may occur. And also mentioned about “**Dharaniya Vegas**” or urges which should be suppressed always - eg. Kayik, Vachik & Manasik vegas.

This science has also given importance to intake to “**Rasayana**” to maintain healthy life and “**Vajikarana**” which acts as “Aphrodisiac”, and helps to have better progeny. “ **Achara Rasayana**” or “Sadvrittis” are also mentioned in “**Chikitsa sthana**” Rasayana chapter,

which is “Good behaviour or Thoughts” to maintain healthy state of mind. Which is also a part of healthy living in Ayurveda. Flowers are most attractive part of the plant which are associated with beautiful harmony , colours, and fragrance. In Ayurveda flowers have distinct place and are used in various diseases and in healthy condition. “Pushpayurveda” is also a part of Veda has given importance to maintain healthy life. The book has 5 chapters, from them the 3rd contains use of flowers in healthy daily life; 4th chapter contains therapeutic uses of flowers in different diseases; the 5th or last chapter describes the various pharmaceutical forms in which flowers can be used.

As for example :

flowers are used in “Anutaila”- mainly lotus stamens are used for snuffing (C.S.Su 5.64-65); used in “Shirosnana”- twaka, kushtha, lotus stemens tagara, balaka and Nagakeshara are used. As head oil, mainly Jati, Patala, Muchkunda etc are used by healthy individuals, as paste which checks perspiration, foul smell, abnormal complexion etc. In this purpose chandan, kumkum and Agaruru etc are used. Flowers are also used to scenting cloths, scenting water, and also used as aphrodisiac or bajikarana. For dyeing clothes flowers are used as for example, Kimshuk pushpa . In therapeutic purposes flowers are used:

In jwara or fever- Madhukapushpadi kashaya (In all Fever- A.H.Ci. 1. 67-68); Katutrikadi yoga (In Kaphaja jwara S.S.U 39.187)

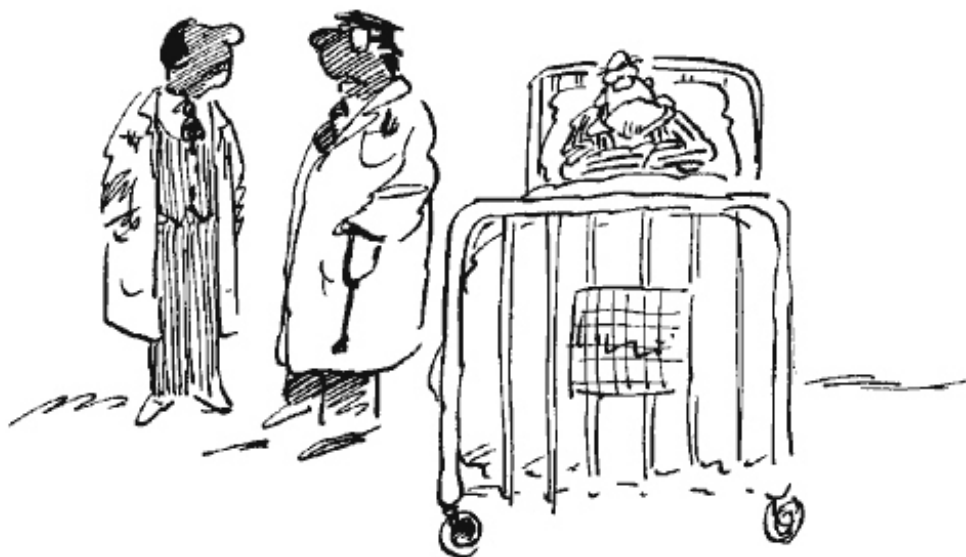
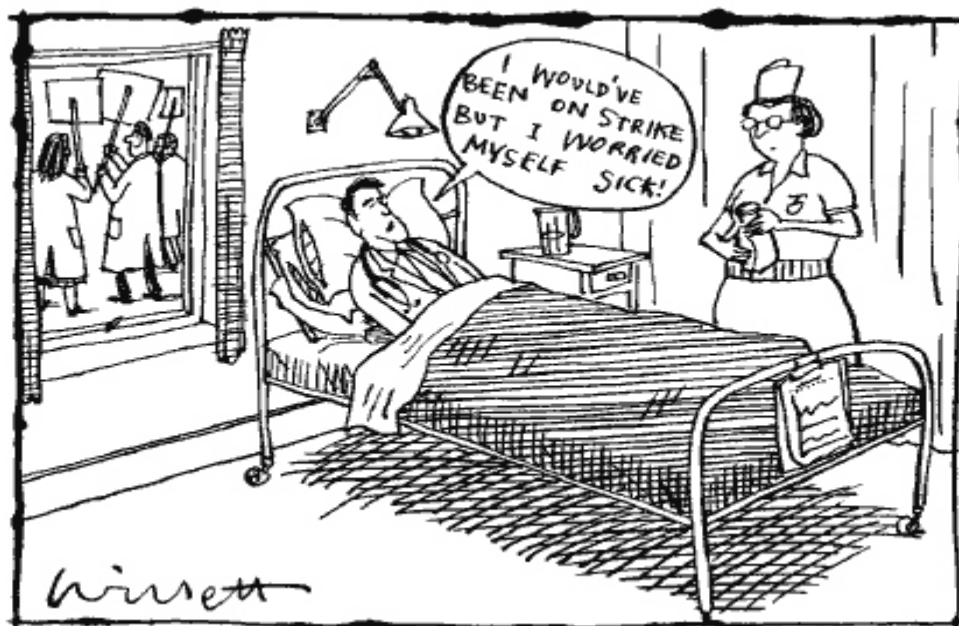
Vasadya ghrita containing Utpala eradicates chronic Fever (C.S.Ci 3.223)

It should be remembered always that “ First priority of life is life itself ”. “Ayurveda”, the way of life is comprised first of all of a thorough comprehension of it's principles. After this we proceed to an understanding of ourselves in the light, then we will learn to co-ordinate our nutrition according to our constitution, environment, climate and weather. This will lead us to an awareness of ourselves and an understanding of our health problems. To provide balance to our body & mind, the Ayurvedic way of life teaches us to activate and vitalize all the physical organs and mind processes through Yogic exercises. The vitality increases our immunity and gives us a store house of energy that can be used to cure chronic ailments and minor health problems, aided of course, by the use of Ayurvedic mild medicines. Such indeed is our ancient Ayurveda the way to a wholesome and whole life a royal road to health and longevity for all.

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*"He criticizes everything - the food, the staff - everything!
So I've put him on the critical list."*

Clinical Evaluation of Kati Basti therapy in the management of Low back pain

Dr. Tapas Bhaduri (MD)

Abstract

Low back ache is the second most common disease that human beings comes across. About 80% of the population complains about it at some time in their life. Most of them may subside automatically or after taking rest. In about 78 % of men and 89 % of women the cause is nonspecific. Kati basti is an external application of oil and very common procedure of treatment practised under panchakarma therapy. Though Samsodhan and Sansaman therapies are the main variety of the Ayurvedic treatment yet samsodhan is the first and foremost therapy towards cure of a disease. As Kati is the main seat of vata, so only kati basti therapy which is praised by our ancestors might have some role in the treatment of said ailment. Bala and tila-taila both are known reputed vatanasakdravya so Kheerbalataila was taken for this study in Low back pain cases. Low back pain patients were selected from out-patient department and In patient department also. Kati basti could provide relieving effect on the problem specially by relieving pain and stiffness. kati basti has shown no adverse effect in this study.

Keyword kati basti, oil, vata, low back pain.

Introduction

Ayurveda is a medical science, it ensures a healthier and longer life to the human being. Science is always dynamic, continuous researches and re-evaluations are the healthy mode for gradual growing up of knowledge and development of easier, newer and finer system to the human civilization. From ancient period to till date Ayurveda is playing an important role towards providing healthy individual as well as social life by its *Trisutra* or three vital humours theory. Acharya Charak stated that "vayustantrayantradhara", the vatadosha, in its normal state of functioning sustains all the organs of the body. It prompts all types of actions. It coordinates all the sense faculties and helps in enjoyment of their objects. It brings about compactness in all the tissue elements of the body. So our prime target is to keep vata in a state of equilibrium. It is now evident that people are suffering from several life style disorders and degenerative ailments where derangement of vata is the main factor. So keeping in the mind vatanasak treatment is advised in these cases. The anatomy of the spine and modern lifestyle have added a high range of susceptibility for the disease. Mostly bad posture of the office working population, working with computers for hours, motor cycle driving has increased the incidence. Other traumas during road traffic accidents too cause a similar problem, just after the event or later in life. A wide range of aetiologies are noted as the cause of low back pain starting from minor trauma to carcinogenic conditions. The causes of LBA can mainly be divided into primary and secondary aetiologies. The cause directly associated with the Lower back structures i.e. Lumbo-sacral vertebrae, ligaments, muscles etc. can be classified under the primary cause, where as a radiating pain from

nearer viscera's like intestine, uterus, bladder etc. are considered secondary causes. The most common causes of LBA are Back Muscle Strain, IVDP, Obesity, Bad posture, Facet joint arthritis, Occupational causes.

Causes of Low back pain are categorised in below;

Mechanical (97%)	Non-Mechanical (1%)	Visceral organ disease (2%)
Strain, sprain (lumbar) (70%) Degenerative disc & facet (10%) Disc Herniation (4%) Spinal Stenosis (3%) Osteoporotic Compression Fracture (4%) Spondylolisthesis (2%) Traumatic Fracture (<1%) Congenital Disorders (<1%)	Neoplasia (0.7%) Infection (0.01%) - Osteomyelitis - Epidural Abscess - Paraspinal Abscess - Pott's disease - Inflammatory Arthritis (0.3%) - Ankylosing spondylitis - Psoriatic spondylitis - Reiter's Syndrome - Paget's disease - Visceral organ disease (2%)	Diseases of the Pelvic organs (prostatitis, endometriosis) Renal disease (nephrolithiasis, pyelonephritis, perinephric abscess) Aortic Aneurysm Gastrointestinal disease (pancreatitis, cholelithiasis)

It has been found that management of Low back pain in modern medicine is not efficacious for long term use. So responding to the demands of science and sufferers the present study is going to provide a safe as well as comparatively effective solution to the suffering humanity.

Aims and Objective

1. To establish the effectiveness of Kati basti therapy in low back pain.

Lecturer, Department of Panchkarma,

Babe Ke Ayurvedic Medical College & Hospital, VPO. Daudhar, Distt. Moga (Pb.)

2. To evaluate the action of ksheerbalataila in the said management.
3. To judge adverse effect if any.

Ethical Clearance

The study was cleared by the Institute Ethics committee. Written consent was taken from each patient willing to participate before the start of the study.

Material and Method

Ksheer-bala taila the trial drug was prepared in pharmacy of I.P.G.A&R at S.V.S.P. Hospital following the method mentioned in A.P.I. 30 patients were selected under age group of 18-60 years from Kayachikitsa O.P.D of I.P.G. A.E&R at S.V.S.P Hospital irrespective of age, sex, occupation, habit etc. for the clinical study of this research programme.

Level of the Study

The selected patients for clinical trial were admitted to the indoor of Kayachikitsa department.

Type of Study - Single blind clinical study.

Sample Size - 30 cases were selected for this study in a two different groups.

Inclusion Criteria

- 1) Age: (18-60)years ,Irrespective of sex ,occupation, educational status.
- 2) Complaint like Low back pain of different degree, Stiffness, pain radiating to the back of the leg, S.L.R.T = 40 degree.
- 3) Freshly diagnosed cases (>2 years) who have been suffering from Low back pain ,not receiving any other treatment from outside were selected for admission In patient department.

Exclusion Criteria

- 1) Low back pain with evidence of malignancy, tuberculosis.
- 2) Low back pain complicated with DM, post C.V.A, C.R,F.
- 3) Low back pain with evidence of I.V.D.P.

Laboratory Investigations

- 1) Routine blood examination TLC, DLC, HB%, ESR, PPBS.
- 2) Radiological examination- X-ray L/S spine AP & Lateral view.

Grouping

After proper screening 30 established cases of L.B.P taken under clinical trial were randomly categorised into two groups as per specific therapy irrespective of age, sex, religion.

Group A. 18 patients have been selected for this group.

Drugs Ksheerbala taila for kati basti therapy.

Dose 200ml for 14 days.

Group B. 12 patients have been selected for this group.

Drugs Pure Guggulu for oral use .

Dose 1 gm for 14 days.

Assessment of Results - Effectiveness of therapy was assessed on the basis of subjective and objective parameters before and after treatment.

Follow up - After completion of therapy the patients were asked to come and attend O.P.D. for 1 month for check-up.

Observations and Results

The effectiveness of the Kati-basti therapy and oral intake of pure Guggulu therapy in the patients of group A and B have been assessed as per relief of subjective and objective parameters .Intensity of pain , duration of pain were assessed first then stiffness was assessed. The data revealed from before treatment and after treatment was observed carefully. Laboratory investigations were performed before and after treatment and these were also compared. All the data related to assessment of effectiveness was gone through the statistical analysis to make scientific evaluation of effectiveness of the therapy.

Discussion

In case of group A the scoring of Low Back Pain, duration of low back pain,Stiffness and SLRT were 2.75, 2.75, 2.17 and 2.00 respectively before treatment which are reduced up to 2.42, 2.25, 1.67and 1.67 respectively after treatment. It is revealed that all these scoring is reduced to 21%, 18%, 23.04% and 16.50%. In case of only intensity of LBP and duration of LBP it is found statistically significant effect ($P < 0.05$). In case of group B the scoring of intensity of Low Back Pain, duration of L.B.P, stiffness and SLRT were 2.28,2.17, 2.72 and 3.06 respectively BT which are reduce up to 1.72, 1.72, 2.28 and 2.6 respectively AT.It is revealed that all these scoring reduced to 24.56%, 20.73%, 16.17% and 14.70%. It is found highly significant ($P < 0.01$) in case of intensity of LBP and Duration of LBP.

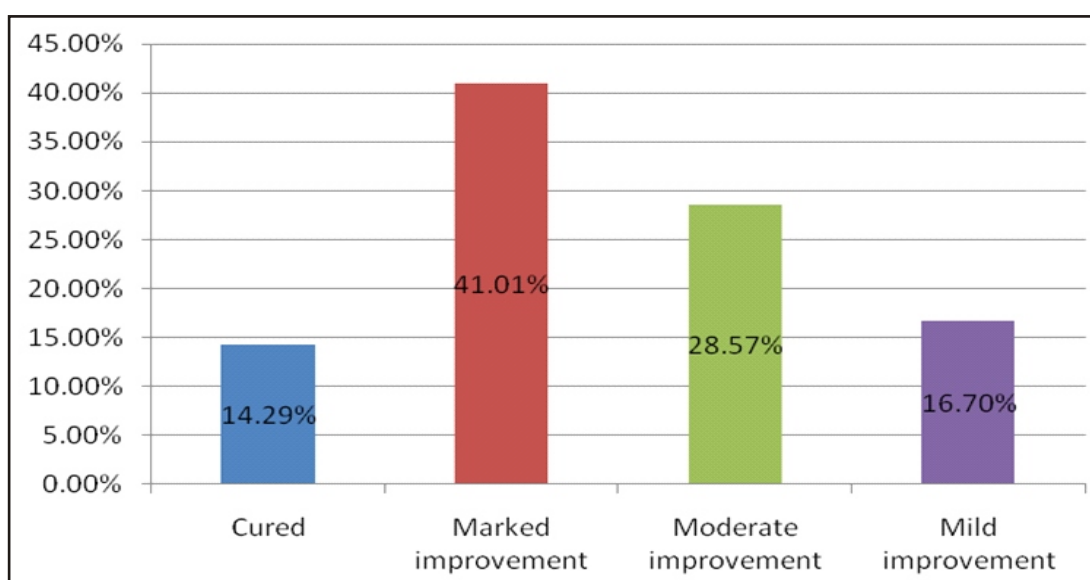
The observations and results found in the present study are encouraging, because the Kati Basti therapy in case of Group (A) patients showed mild to moderate degree of curative effect. In case of Group (B) patients where pure guggulu oral drug has been introduced have showed less curative effect than Group (A) patients by reliving the cardinal Symptoms. This incidence proved that Kati Basti has the moderate effect only ,oral drug gugglu has the mild effect over the problem .So in a nutshell it could be declared that only Kati Basti is better,

only gugglu is good but in combination of the both, the therapy could plays the best role.

Showing the Total Response of The Therapy

Response	No. of patients		Total patients	% of relief
	Group A	Group B		
Cured	3	1	4	14.29%
Marked improvement	10	3	13	41.01%
Moderate improvement	5	3	8	28.57%
Mild improvement	3	2	5	16.70%

Showing the Total Response of The Therapy



Conclusion

After 14 days of treatment the results were assessed in terms of subjective improvement. The response of treatment to subjective criterias was also judged by applying a scoring method. In this study 14.29% patients were cured, 41.01% patients showed marked improvement, 28.57% patients had moderate improvement and 16.70% patients had mild improvement. It was found in statistical analysis that the response of Kati basti in group A patients was highly significant in back pain and stiffness, whereas oral drug Shudha Guggulu given in group B patients was highly significant in low back pain only. But in case of SLRT both therapies were found insignificant. Any side effect or toxicity was not observed during the study period. Kati basti with ksheer bala taila was found to be a potential remedial measure for patients suffering from L.B.P. During this study it was found that both the therapies reduced the complaints of patients within 2

weeks of treatment. So in nut shell it can be concluded that Kati Basti individually could provide moderate relieving effect on the low back pain specially by relieving pain and stiffness but combination of both Kati Basti and oral drug i.e Guggulu are highly effective in L.B.P.

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Historical Review of Eladi Gutika

Dr. Rajesh Kumar

Abstract :

Ayurvedic formulations plays an important role in treating various diseases. Eladi Gutika is one of these formulations, which have been using for treating various diseases. It was first described in Charaka Samhita and later in subsequent classics. In the present article the description of Eladi Gutika, its contents and therapeutic dose according to various classics is presented.

Key Word : Historical Review, Eladi Gutika

Introduction :

Eladi Gutika is one of the commonly used formulations in Ayurveda . It is used mainly for Kshatksheena, Kasa, Shwasa, Rajayakshma, Raktapitta and for Vrishya purpose also. It consists of Ela-sukshma, Tejapatra, Twak , pippali, Sita, Madhuyasti, Kharjura, Drakaha and Madhu. Eladi Gutika was first described in Charaka Samhita and the references regarding Eladi Gutika are also available in Ashtang Sangraha, Ashtang Hridaya, Vrinda Madhava, Chikitsa Kalika, Harita Samhita, Chakradatta, Vangsen Samhita, Rasa ratnakara, Bhava Prakash, Yog Chintamani and A.F.I. part I etc. also. All references regarding Eladi Gutika in various classics are shown in Table No. 1.

Table No. 1 - Eladi Gutika in Various Ayurvedic Classics

S.No.	Reference	Author	Period	Rogadhikar
1.	Charaka Samhita	Dridhabal	4th Cent.	Kshataksheen
2.	Ashtang Sangraha	Vridha Vagbhatta	6th Cent.	Kshaksheen
3.	Ashtang Hridaya	Laghu Vagbhatta	7th Cent.	Kasa
4.	Vrinda Madhava	Vrinda Madhava	9th Cent.	Raktapitta
5.	Chikitsa Kalika	Tistacharya	10th Cent.	Raktapitta
6.	Harita Samhita	Harita	10-11th Cent.	Arsha
7.	Chakra Datta	Cakra Dutta	11th Cent.	Raktapitta
8.	Vangsen Samhita	Vangsen	12th Cent.	Kshatksheena
9.	Rasa Ratnakar	Nityanatha	15th Cent.	Raktapitta
10.	Bhava Prakash	Bhavamishra	16th Cent.	Rajyakshama
11.	Yoga Chintamani	Harsha Kirti	17th Cent.	Udara Roga
12.	Yoga Ratnakar	Yoga Ratnakar	17th Cent.	Raktapitta
13.	Yoga Tarangini	Trimalla Bhatta	21st Cent.	Urah Kshata
14.	Vaidya Rahashya	Bhisagvar Vidyapati	18th Cent.	Raktapitta
15.	Bhaishajya Ratnawali	Govinda Das Sen	19th Cent.	Raktapitta
16.	Aryabhishaka Ousadhi	Sankardaji Shastri	19th Cent.	Raktapitta
17.	Kriya Uttarardha Khand-3	Pade		
17.	Bharat Bhaishajya Ratnakar	Shri Nagin Lal, Chagan Lal Shah	20th Cent.	Raktapitta
18.	Rasatantara Sara Va Siddha prayoga Sangraha	Krishna Gopal, Ayurveda Bhavan (Dharmarth Trust)	20th Cent.	Kasa
19.	A.F.I. Part I	Govt. Of India	20th Cent.	Raktapitta
20.	Siddhayog Sangrah	Yadavji Trikamji Acharya	20th Cent.	Kasa, Swasa
21.	Arogya Chintamani	Damodara Bhattacharya	20th Cent.	Raktapitta, Pradara
22.	Ananda Mala	Rajasthan Puratana, Grantha Mala	20th Cent.	--
23.	Nutanamrita Sagar	Khem Raj Sri Krishna Das	20th Cent.	Raktapitta, Rajyog, Shosha
24.	Vrihat Nighantu Ratnakar	Shri Datta Ram, Sri Krishnalal Mathur	20th Cent.	Raktapitta
25.	Bheshaja Samhita	Swasthya, Mantralaya Gujarat, Govt.	20th Cent.	Kshatksheena

*Lecturer, Deptt. of Rasa Shastra & Bhaishajya Kalpana,
S.L.B.S.S. Govt. Ayurved Mahavidyalaya, Handia, Distt Allahabad (U.P.)*

Eladi Gutika consists of Ela-sukshma, Tejapatra, Twak, pippali, Sita, Madhuyasti, Kharjura, Drakaha and Madhu. The recommended dose of Eladi Gutika according to Ayurvedic Classics is mainly 12 gms. The ratio of ingredients of Eladi Gutika according to various classics are also shown Table No. 2

<i>Ingredients of Eladi Gutika in Various Ayurvedic Books.</i>															
S. No	Ingredients	Part used	Cha. Sa.	As Sa	AH	VM	CD	Ch K	V Sa	RR	BPMK	Y Ch	Y R	Ch M	VR
1.	Ela shuksma	Seed	6 gm	+	+	+	+	+	+	+	+	+	+	+	+
2.	Tejapatra	Leaf	6 gm	+	+	+	+	+	+	+	+	+	+	+	+
3.	Twak	Bark	6 gm	+	+	+	+	+	+	+	+	+	+	+	+
4.	Pippali	Fruit	24 gm	+	+	+	+	+	+	+	+	+	+	+	+
5.	Sita (Mishri)	Sugar	48 gm	+	+	+	+	+	+	+	+	+	+	+	+
6.	Madhuyashti	Root	48 gm	+	+	+	+	+	+	+	+	+	+	+	+
7.	Kharjura	Fruit	48 gm	+	+	+	+	+	+	+	+	+	+	+	+
8.	Draksha	Fruit	48 gm	+	+	+	+	+	+	+	+	+	+	+	+
9.	Madhu	Honey	*	*	*	*	*	*	*	*	*	*	*	*	*

Discussion & Conclusion :

Eladi Gutika, which was mentioned first in Charak Samhita, used commonly for Kshatsheena, Kasa Shwasa, Rajayakshma, Raktapitta and for Vrishya purpose also. Later references regarding Eladi Gutika are also available in Ashtanga Sangraha, Ashtanga Hridaya, Vrinda madhava, Chikitsa Kalika, Harita Samhita, Chakradatta, Vangsen Samhita, Rasaratnakara, Bhava Prakash, yoga Chintamani and A.F.I. part I etc. also (Table No.1). Majority of classics mentioned the ingredients Eladi Gutika as Ela-sukshma, Tejapatra, Twak, Pippali, Sita, Madhuyasti, Kharjura, Drakha and Madhu. (Table No. 2). In Nutanamrit Sagar besides above ingredients, Vansalochana(48 gm) is also added in Eladi Gutika. Haritaki(48 gm) is also added in Eladi Gutika besides above ingredients as per Yoga Ratnakar, Laksha (48 gm) is also present in Eladi Gutika besides above ingredients. The reference of Eladi Gutika has been described in Yog Chintamani at two place; one in Gutika dhikar and other in Udara Roga. But the ingredients in Udararoga is different from previous one which is mentioned in table No. 2. The ingredients of Eladi Gutika in Udara Roga are Ela sukshma, Pippali,

Harad, Shunthi, Chitraka, Tankana, Sarsap, Sarjee Kshara, Vidanga, Jeera, Jaggery and Sora. As per the text Ayurveda sar Sangraha, the ingredients of Eladi Gutika are also mentioned in Kharjuradi vati. But there is little difference in the ratio of their constituents, khand is taken in place of mishri in Kharjuradi Vati. The contents of Eladi Gutika mentioned in Vaidya Kaustubha are Pippali one part and Gandhatraya 1 part. Recommended dose of Eladi Gutika in A.F.I. part Ist is 6 gms. In Rasatantra Sar and Siddha prayoga Sangraha, 250 mg(10-15 times per day) and all other classics of Ayurveda have mentioned 12 gm. Dose of Eladi Gutika. (Table No. 3).

From this it may be concluded that Eladi Gutika was first mentioned in Charaka Samhita and its references are later available in Astanga Sangraha, Ashtanga Hridaya, Vrinda madhava, Chikitsa Kalika, Harita Samhita, Cakradatta, Vangsen Samhita, Rasaratnakara, Bhava Prakash, Yog Chintamani and A.F.I. part I etc. also. It contains Ela-Sukshma, Tejapatra, Twak, Pippali, Sita, madhuyasti, Kharjura, Drakaha and Madhu. Majority of classics of Ayurveda have recommended the therapeutic dose of dose of Eladi Gutika as 12 gms.

► BKAMCH's Amrit Sanchar

दधि एवं तक्र का चिकित्सा में महत्व

*प्रो० एस.एस. बेदार

**डा० शशि शर्मा

दधि एवं तक्र का हमारे आहार में विशेष स्थान है। दधि में सोम का निवास कहा गया है। कोई भी धार्मिक कर्मकाण्ड बिना दधि के पूर्ण नहीं होता है। यज्ञ, पूजन, व्रत, विवाह तथा अनेक उत्सवों में दधि को शुभ तथा आरोग्यसूचक माना गया है। दोनों का प्रयोग आहार रूप में ही नहीं अपितु रोगशमनार्थ भी होता है। औषधि-निर्माण तथा पंचकर्म आदि अनेक चिकित्सा उपक्रमों में भी दधि एवं तक्र का प्रयोग किया जाता है।

दधि – दधि रस में अम्ल, कषाय अनुरस, गुरु, स्निग्ध, उष्ण वीर्य, अम्ल विपाकी तथा अभिष्यन्दी है। दधि अभिष्यन्दी होने के कारण त्रिदोष प्रकोपक तथा स्रोतावरोध उत्पन्न करता है इसलिए इसका प्रयोग रात्रि में सर्वथा नहीं करना चाहिए। आचार्य चरक ने घृत, शर्करा, मधु, आमलकी चूर्ण तथा मुद्ग यूष के बिना भी दधि सेवन का निषेध किया है। शर्करा के साथ दधि खाना श्रेष्ठ है। दधि को उष्ण करके प्रयोग नहीं करना चाहिए। उष्ण करने पर इसका अभिष्यन्दी प्रभाव अधिक हो जाता है तथा यह उष्णता के कारण रक्त एवं पित्त को दूषित करता है। मन्दक दही (जो ठीक से न जमा हो) उसका प्रयोग कदापि नहीं करना चाहिए क्योंकि वह महाभिष्यन्दी, दाहकारक और मल-मूत्र कारक है। चुक्र दधि (अधिक खट्टा) भी रक्त प्रकोपक होने के कारण वर्जित है। दधि तथा दुग्ध का एक साथ प्रयोग विरुद्ध आहार है तथा विष के समान घातक है। जनसामान्य में यह धारणा है कि दधि के शीतल होने के कारण इसका प्रयोग उष्ण ऋतुओं में करना चाहिए परन्तु शास्त्र में दधि को स्पष्ट रूप से उष्ण कहा गया है क्योंकि दधि का निर्माण किण्वन क्रिया द्वारा होता है। ग्रीष्म, बसन्त, शरद ऋतु में दधि प्रयोग नहीं करना चाहिए, क्योंकि इन ऋतुओं में अग्नि के मन्द होने के कारण अभिष्यन्दी दही का ठीक से पाक नहीं होता है। ग्रीष्म ऋतु उष्ण होने के कारण उष्ण दधि के सेवन का निषेध किया गया है। वसन्त ऋतु में कफ के प्रकोप के कारण स्रोतस पहले से ही अवरुद्ध होते हैं इसलिए अभिष्यन्दि दधि का प्रयोग नहीं करना चाहिए। शरद ऋतु में पित्त के प्रकोप के कारण उष्ण दधि वर्जित

है। दधि का प्रयोग हेमन्त, शिशिर तथा वर्षा ऋतु में करना चाहिए क्योंकि हेमन्त, शिशिर ऋतु शीत होती है एवं इनमें जाठराग्नि प्रबल होती है तथा वर्षा ऋतु में वर्षा के कारण वातावरण का तापमान कम हो जाता है।

दधि का प्रयोग रोग शमन में तभी करना चाहिए जब रोगी की अग्नि दीप्त हो। दधि दीपन, वृष्य, स्नेहन, मंगलकारी, बृंहण, पवित्र, कफपित्तवर्धक, रुचिकर, ग्राही, वातनाशक, शुक्रल, बलवर्द्धक, अग्निवर्द्धक, प्राणदायक, निद्राजनन, अनुलोमक, मूत्रल, अभिष्यन्दी तथा संतर्पण कारक है। अम्ल दधि आर्तवजनन माना गया है। अर्श, अतिसार, छर्दि, कास, विषम ज्वर, मदात्यय, योनिव्यापद, आनाह, प्लीहोदर, हृदय रोग, हृदशूल, मूत्रकृच्छ्र, रक्ता-भिष्यन्दी, कर्ण-अक्षि रोग आदि में दधि हितकर है। परन्तु यदि दधि का निरन्तर तथा अधिक मात्रा में प्रयोग किया जाए तो वह कुष्ठ, रक्त पित्त, शोथ, प्रमेह, अर्श, ग्रहणी आदि रोगों की उत्पत्ति में कारण होता है।

गाय के दूध की दही अत्यन्त उत्तम, बलकारक, मधुर विपाकी, रुचिकारक, पवित्र, अग्नि दीपक, स्निग्ध, पुष्टिकारक और वायुनाशक है। बकरी के दूध की दही उत्तम, ग्राही, लघु, त्रिदोषशामक और श्वास-कास-अर्श-क्षय-काश्य में हितकर है। भैंस के दूध की दही अत्यन्त स्निग्ध, कफकारक, वात-पित्तनाशक, मधुर विपाकी, अभिष्यन्दी, वीर्यवर्धक, गुरु और रक्त को दूषित करने वाली होती है।

दही के ऊपर के पानी को मस्तु कहते हैं। यह बल्य, लघु, रुचिकर, स्रोतोविशोधन, प्रसन्नताकारक, कफ-वात-पिपासानाशक, पुष्टिकारक, कुछ मात्रा में वृष्य तथा मलसंग्रह का भेदन करने वाला होता है। दही के ऊपर स्नेहयुक्त घन भाग (दही की मलाई) मधुर, गुरु, वीर्यवर्धक, वातशामक और अग्निनाशक है।

तक्र – तक्र की महिमा का वर्णन करते हुए योगरत्नाकर में कहा गया है कि यदि कैलाश पर तक्र होता तो शिव नीलकण्ठ नहीं होते, यदि बैकुण्ठ में तक्र होता तो कृष्ण काले नहीं होते, यदि देवलोक में तक्र होता तो राजा इन्द्र कुरूप नहीं होते तथा

*विभागाध्यक्ष, संहिता एवं सिद्धान्त,

राजकीय आयुर्वेद महाविद्यालय, लखनऊ

**रीडर, प्रसूति तंत्र एवं स्त्री रोग,

चन्द्रमा को क्षय रोग नहीं होता और न ही गणेश लम्बोदर होते, कुबेर को कुष्ठ रोग भी नहीं होता तथा अग्निदेव के अन्दर दाह नहीं होता अर्थात् तक्र सेवन विशनाशक, वर्ण्य, सौन्दर्यवर्द्धक, क्षय-मेद-कुष्ठ-दाहनाशक होता है। साथ ही यह भी कहा गया है कि तक्र का प्रतिदिन सेवन करने वाला व्यक्ति कभी रोगी नहीं होता है, तथा जिस रोग की चिकित्सा तक्र द्वारा की जाती है वह पुनः उत्पन्न नहीं होता। जिस प्रकार देवताओं के लिए अमृत प्रधान है उसी प्रकार पृथ्वी लोक में तक्र का स्थान है।

सुश्रुतानुसार मन्थन करके जिसमें से स्नेह निकाल लिया गया है और दही से आधा पानी जिसमें मिला हो, जो न अधिक गाढ़ा और न अधिक पतला हो तथा जो मधुर, अम्ल, कषाय रस हो उसे तक्र कहते हैं। तक्र उष्ण, विकासी, रुक्ष होता है तथा कफ की विकृति में हितकर है। यद्यपि तक्र अम्ल होता है उसे पित्त को प्रकुपित करना चाहिए परन्तु मधुर विपाकी होने से पित्त को कुपित नहीं करता। तक्र अभिष्यन्दी होता है, इसलिए उसे कफ को बढ़ाना चाहिए परन्तु कषाय, उष्ण, विकासी और रुक्ष होने से कफ विकारों में भी हितकारी होता है। कषाय रुक्ष होने से तक्र को वायु की वृद्धि करनी चाहिए परन्तु मधुर, अम्ल तथा सान्द्र होने के कारण वात विकृति में भी हितकर है। सद्यः बनाये तक्र सेवन से शरीर में दाह भी उत्पन्न नहीं होता।

रोगी के अग्नि बलानुसार चतुर्थांश से लेकर समान अथवा दोगुना तक जल मिलाकर तक्र बनाने का निर्देश विभिन्न आचार्यों ने दिया है। कफजन्य रोगों में सम्पूर्ण मक्खन निकाल कर, पैत्तिक विकारों में कुछ मक्खन छोड़कर तथा वातिक विकारों में सम्पूर्ण मक्खन युक्त तक्र का सेवन करना चाहिए। सुश्रुतानुसार वात प्रकोप में सैन्धवयुक्त अम्ल तक्र, पित्त प्रकोप में शर्करा युक्त मधुर तक्र तथा कफ प्रकोप में त्रिकटु, यवक्षार चूर्ण युक्त तक्र का सेवन करना चाहिए। तक्र गुल्म, अर्श, ग्रहणी, शोथ, पाण्डु, मूत्रकृच्छ्र, अतिसार आदि रोगों का नाश करने वाला होता है। यह रुचिकारक, बलकारक, बस्तिशूल, मेदोवृद्धि तथा विष विकारों का नाश करने वाला होता है। योग रत्नाकर के अनुसार श्वास, कास, पीनस आदि में पक्व तक्र का प्रयोग करना चाहिए। कच्चा तक्र कोष्ठ स्थित कफ का नाश करता है तथा कण्ठ स्थित कफ को बढ़ाता है। योग रत्नाकर ने तक्र को क्षुधावर्धक, नेत्ररोग-नाशक, बलकारक,

रक्त और मांसवर्धक, तथा आम-कफ-वातनाशक कहा है। शीतकाल, अग्निमांघ, कफ-वातरोग, अरुचि तथा स्रोतावरोध में तक्र अमृत के समान गुणकारी है। क्षतरोग, उष्ण काल, दौर्बल्य, मूर्च्छा, भ्रम, दाह, रक्तपित्त में तक्र का सेवन नहीं करना चाहिए। लवणयुक्त तक्र ग्रहणी में हितकर तथा लवणरहित तक्र ग्रहणी और अर्श रोग उत्पन्न करने वाला होता है। गोतक्र दीपन, मेधावर्धक, त्रिदोषनाशक, अर्श-अतिसार-प्लीहा ग्रहणी रोगों में लाभकारी है। अजातक्र सुस्निग्ध, लघु और त्रिदोषनाशक है, जबकि महिष-तक्र कफकारक, गुरु, सान्द्र और शोथ उत्पन्न करने वाला होता है।

चरक ने अर्श चिकित्सा में कहा है कि वातकफ जन्य अर्श को नष्ट करने के लिए तक्र से श्रेष्ठ कोई दूसरी औषधि नहीं है, क्योंकि तक्र प्रयोग द्वारा नष्ट अर्शाकुर पुनः उत्पन्न नहीं होते। दोषानुसार स्नेहयुक्त या स्नेहरहित तक्र का सेवन सात, दस, पन्द्रह दिन या एक मास तक कराने का निर्देश है। तक्र का प्रयोग सहसा बन्द न करें। जिस प्रकार तक्रसेवन का उत्कर्ष किया जाता है, उसी प्रकार अपकर्ष भी करना चाहिए। इससे शरीर में जो शक्ति उत्पन्न होती है वह अधिक समय तक बनी रहती है, जाठराग्नि की दृढ़ता, बल, वर्ण और उपचय की प्राप्ति होती है।

चरक ने समस्त उदर रोगों में तक्र का निर्देश किया है। उदर रोगों में न अधिक गाढ़ा और न अधिक पतला, मीठा, स्नेह रहित तक्र का सेवन लाभकारी होता है। वातोदर में पिप्पली और लवण के साथ, पित्तोदर में चीनी, मुलेठी के साथ, कफोदर में अजवाइन, सैन्धव, भुना जीरा, सोंठ, पिप्पली, मरिच चूर्ण एवं मधु के साथ, सन्निपातोदर में सोंठ, पिप्पली, मरिच, यवक्षार, सैन्धव के साथ प्लीहोदर में मधु, तिलतैल, मीठा वच, सौंफ, सोंठ, कूठ और सैन्धव के साथ, जलोदर की अजातोदक अवस्था में सोंठ, पिप्पली, मरिच चूर्ण मिलाकर, बद्धोदर में हारुबेर, अजवाइन, भुना जीरा, सैन्धव चूर्ण के साथ तथा छिद्रोदर में मधु एवं पिप्पली चूर्ण मिलाकर तक्र का सेवन करना चाहिए।

समस्त वात-कफ रोग, मन्दाग्नि, अरोचक, अतिसार, ग्रहणी, अर्श, उदर रोग आदि में तक्र अमृत के समान गुणकारी होता है। अतः दधि एवं तक्र का सेवन प्रशस्त काल में विधिपूर्वक करने पर अत्यन्त गुणकारी तथा आरोग्यदायक होता है।

Importance of Kriyakala in the Prevention of Disease

Dr S. K. Pathak

The general meaning of kriyakala is opportunity/time for treatment. It is derived from two words – kriya+ kala. Kriya means action or treatment & kala means time or opportunity. Therefore kriyakala means time or opportunity for the treatment. When doshas become imbalanced (Either increased or decreased) in the body due to mithyaahar and vihar or pragyaparadh, they create some abnormalities in the body called as “Rogastu Dosha Vaishamyam” in Ayurveda. Some symptoms are also produced by vitiated doshas before the occurrence of diseases which are called purvarupa or pre monitory symptoms. Acharya Sushruta has described the six stages of doshas with symptoms during manifestation of diseases. These stages are Sanchaya, Prakopa, Prasara, Sthansanshraya, Vyaktavastha & Bhedavastha respectively. To obtain the knowledge of any disease, the knowledge of six stages of doshas is very essential. In this context Sushruta has quoted that “the physician who knows about the six stages of doshas is a perfect physician.” Knowledge of any disease and its management is impossible without proper knowledge of these six stages of doshas. If proper treatment is given to the patients to control the imbalanced doshas , they can not enter in the other stage, and as a result body is prevented from the attack of disease. Sushruta quoted that “Sanchaye apahrita dosha labhante nottara gatih, tetatrasu gatisu bhavanti balvantarah. (Su. Su .21/36). So these six stages of Doshas are known as kriya kala. Detailed descriptions of each and every stage of Doshas are as given below.

1. Sanchaya Avastha (stage of accumulation) - This is the first stage of kriyakala. In this stage doshas are accumulated in their own location thereby creating some clinical signs and symptoms, where they have been accumulated.

This accumulation of doshas are of two types –
a) Swabhavik sanchaya. b) Aswabhavik sanchaya.

a) Swabhavik sanchaya – (Normal accumulation)- this type of sanchay is according to season, stages of life and prakriti.

According to season -

Vata – in Grishma ritu,
Pitta – in Varsha ritui,
Kapha – in Hemanta ritu.

According to stages of life –

Balya vastha – accumulation of kapha dosha,
Tarun Avastha (Adult) – pitta dosha,
Vridha Avastha (old age)- Vata dosha.

According to prakriti -

Vata prakriti – Vata sanchay,
Pitta prakriti – pitta sanchay,
Kapha prakriti – kapha sanchay.

b) Aswabhavik sanchaya (abnormal accumulation)- this is due to mithyaahar , mithya vihara and pragya pradha.

Mithya Ahara :-

Akale chatimatram cha, Asatmyamcha Bhojanam,
Mithyaaharam Atiuktam sada chiva vivarjayeta
i.e. Untimely and excessive quantity of food,
asatmya ahar (harmful diet) is known as mithya ahara.

Mithya Vihara-

Ashaktah kurute shakti manang karoti cha,
Mithyavihara mityuktam sada chibva vivarjayeta
i.e. Doing excess of work from the capacity and intolerable burden on the head is always prohibited.
Pragyaparadha -is the main root cause of all the diseases.

2. Prakopa Avastha (Stage of aggravated or prolonged doshas) :-

This is second stages of kriyakala. This condition arrives when imbalanced doshas are not treated properly. The imbalanced doshas which have previously been accumulated in their own particular sites tend to become excited in this stage. Thus the aggravated doshas produce some signs & symptoms in their own particular sites where they had previously been accumulated.

Types of Dosha Prakopa :-

● **Swabhavika Prakopa (Natural aggravation)-** this is due to seasonal changes in the body.

a) Varsha Ritu Vata Prakopa
b) Sharad Ritu Pitta Prakopa
c) Vasant Ritu Kapha Prakopa

*M.D. (Ayu.) Professor & H.O.D., Department of Kriya Sharir,
G.J. Patel, Ayurvedic College & Research Centre, N.V.V. Nagar, Anand (Gujarat)*

● **Aswabhavika Prakopa (Untimely aggravation):-**

This is due to Mithyahara & Vihara. During this period proper identification about the clinical signs & symptoms produced by doshas & its proper treatment is essential. If the deranged doshas are not properly treated in the second stage of kriyakala, they will create other abnormalities.

3. Prasra Avatha (Stage of Spreading):- This is the third stage of kriyakala. This condition occurs if proper treatment is not given in the second stage of kriyakala i.e. the stage of aggravated doshas. The aggravated doshas spread from their own particular sites to other places of the body through the channels (Srotas). In this condition also they produce some clinical signs & symptoms which can be identified by veteran physicians. During this stage if proper treatment is not given to the patients by the identification of signs & symptoms, doshas move to the further stage.

4. Sthana Sansraya (Stage of Localization):- This is the fourth stage of kriyakala. This condition arrives in the absence of proper treatment in third stage of kriyakala. The excited & aggravated doshas having

extended to other parts of body become localized, which is known as dosha-dushya sammurchhana. This is the main base of the Samprapti of a disease. In this stage premonitory signs of a disease are clearly manifested during this period if proper treatment is not given in spite of the identification of a disease, it will be an invitation to the disease to attack on the human body.

5. Vyakta Avastha (Stage of Manifestation):- This condition arrives when clinical signs & symptoms produced by the vitiated doshas are ignored in the fourth stage of Kriya Kala. The vitiated doshas may approach fifth stage of Kriya Kala & produce full-blown sign & symptoms of a disease. In this stage if proper treatment is not given to the patient then condition of patient becomes more critical.

6. Bheda Vastha (Stage of Differentiation):- This is the sixth stage of kriyakal. Complications may start in this stage and can be seen clearly. If proper management is not done then the condition of the patient becomes critical & the patient may die at any time, so this sixth kriyakala is very serious & the physician should take care.

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.
- Publication will be made on the basis of the recommendation of editorial board.

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Babe Ke Ayurvedic Medical College & Hospital, V.P.O. Daudhar,

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Contact No. :- 01636-253088, 94171-12450

bkamritsanchar@yahoo.co.in

Scientific Collections from Co-Editors

Triphala Fights Pancreatic Cancer

Triphala i.e. Haritaki, Vibhitaka & Amla is one of the most popular and cheapest herbal drug used in Ayurveda which is generally used for the treatment of intestine related disorders and to promote appetite and digestion. Beside these uses Triphala is having anticancer properties and modern medicine is now learning that it can be one of the most powerful and effective cancer fighter. Regarding this a study was carried out by Dr. Sanjay Srivastava Assistant professor in the deptt of pharmacology of the University of Pittsburgh Cancer Institute, which confirms that this herbal supplement has cancer fighting properties that prevent or slowdown the growth of pancreatic cancer tumors implanted in mice. Dr. Srivastava and colleagues fed mice grafted with human pancreatic tumors 1 to 2 mg of triphala for five days a week and then compared tumor size & level of apoptotic proteins in the tumors to a control group of mice that received normal saline only. They found that the mice that received triphala had increased levels of proteins associated with apoptosis and significantly smaller tumor sizes when compared to the control group. Triphala treated tumors were half the size of tumors in untreated mice. Further testing revealed that triphala activated tumor suppressor genes, resulting in the generation of proteins that support apoptosis, but did not negatively affect normal pancreatic cells. Thus it can be concluded from this study that Triphala has strong anticancer properties without damaging normal pancreatic cells and can be used as anovel agent for the prevention and treatment of pancreatic cancer.

Effect of Herbomineral formulation in the management of Bronchial Asthma

Bronchial asthma is a chronic debilitating disease of respiratory system having varied etiology. Various causative factors such as allergies due to dust, fumes, pollens, smoke, environmental pollution along with genetic factors are responsible for development of bronchial asthma. The alarming rise in the incidence of this disease in metropolitan cities has posed a serious problem. Keeping these factors in mind a study was done to find out a simple and easily accessible treatment for management of bronchial asthma. The study was carried out on two different groups. Group A was given Naradiya Lakshmivilasa rasa and Godanti bhasma in a dose of 500mg and 1 gm respectively three times a day. Group B was given Shwasa Kesari tablets (500mg)

containing Kantkari with Godanti bhasma, three tablets three times a day. The efficacy of treatment has been evaluated on the basis of clinical improvement in signs and symptoms of the disease as well as on improvement in objective criterias such as pulmonary function tests, peak flow rate, Breath holding time etc. results were analysed stastically and it was found that both the trial drugs were equally effective in the management of bronchial asthma. Both the drugs were safe and no untoward side effects were observed during the study.

Efficacy of *Rasayana Avaleha* as adjuvant to radiotherapy and chemotherapy in reducing adverse effects

*Purvi Vya, **A. B. Thakar, ***M. S. Baghel & et all.

Cancer is the most dreadful disease affecting mankind. The available treatments such as chemot herapy and radiotherapy have cytotoxic effects, which are hazardous to the normal cells of the patient. causing many unnecessary effects.This further leads to complications of the therapc impaired health, and deterioration of quality of life, resulting in mandatory stoppage of the treatment. In the present study, the efficacy of an Ayurvedic formulation, *Rosayono Avaleho*, has been evaluated as an adjuvant medication to modern radiotherapy and chemotherapy.A total of 36 cancer patients were registered in this trial and were divided into two groups. group A and group B. In group A, the patients were treated with radiotherapy and chemotherapy along with adjuvant *Rasoyono Avoleho* (RT + CT + RA), while in group B only radiotherapy and chemotherapy (RT + CT) were given, as the control group. After assessing the results, it was observed that *Rasayono Avaleho* gave better results In controlling the adverse effect of chemotherapy and radiotherapy in comparison with the control group. Therefore. *Rasoyona Avaleho* has proved to be an effective adjuvant therapy in protecting patients from the adverse effects of chemotherapy and radiotherapy.

A clinical study on “computer vision syndrome” and its management with *Triphala* eye drops and *Saptamrita Lauha*

*M. P. Gangamma, **Poonam, ***Manjusha Rajagopala American Optometric Association (AOA) defines computer vision syndrome (CVS) as “Complex of eye and vision problems related to near work, which are experienced during or related to computer use”. Most

studies indicate that Video Display Terminal (VDT) operators report more eye related problems than non-VDT office workers. The causes for the inefficiencies and the visual symptoms are a combination of individual visual problems and poor office ergonomics. In this clinical study on "CVS". 151 patients were registered, out of whom 141 completed the treatment. In Group A. 45 patients had been prescribed *Triphala* eye drops; in Group B. 53 patients had been prescribed the *Triphalo* eye drops and *Soptamrita Lauho* tablets internally and in Group C. 43 patients had been prescribed the placebo eye drops and placebo tablets. In total, marked improvement was observed in 48.89, 54.71 and 66.98% patients in groups A, B and C, respectively.

Protective effect of *Yashtimadhu* (*Glycyrrhiza glabra*) against side effects of radiation/chemotherapy in head and neck malignancies

*Debabrata Das, **S. K. Agarwal, ***H. M. Chandola

One of the very common side effects of Radiation/Chemotherapy especially of the head and neck malignancies is mucositis. Cancer therapy or the cancer itself may cause changes in the body chemistry that results in loss of appetite, pain, nausea, vomiting, diarrhea and very common mucositis which makes eating difficult. Loss of appetite is followed by an undesirable loss of weight due to insufficient amount of calories every day which can lead to loss of muscle mass and strength and other complications by causing interruptions of medical therapy, impeding effective cancer therapy. Mucositis cause decreased immunity and quality of life as well as poor tolerance to surgery and altered efficacy of Chemotherapy and Radiotherapy. The present study is designed with the objective to minimize the radiation induced mucositis, skin reaction, xerostomia, change in voice etc. with an Ayurvedic preparation *Yoshmodhu Ghrsto* (processed ghee). Total 75 patients were randomly divided into four groups and drugs were administered: Group A with local application of *Yoshtimadhu* powder and honey in the oral cavity for few minutes prior to radiotherapy along with oral intake of *Yashtimadhu Ghrito*; Group B with only local application of the *Yashtimodhu* powder and honey in the oral cavity; Group C patients administered with only local application of honey in the oral cavity; Group D on conventional modern medication controlled group. All these patients under four groups had received Radiotherapy and Chemotherapy for maximum duration of 7 weeks. Mucositis and Skin reactions were observed in 100% of patients with varying degree. The intensity of Radiation and Chemotherapy induced mucositis was

reduced to a great extent by the trial drug. *Yoshirnodhu* (*Glycyrrhiza glabra*) can be used effectively in prevention and treatment of oral mucositis post radiation and chemotherapy in patients of cancer, especially of the head and neck region. It proves beneficial in two ways: (i) there were no interruptions in the treatment, and (ii) food intake was not severely affected leading to maintenance of nutritional status of the patients.

Leaky Gut Syndrome, Dysbiosis, Ama, Free Radicals, and Natural Antioxidants

*Hari Sharma

The functioning of the gastrointestinal (G.I.) system has wide-ranging influences on the body that go far beyond the G.I. tract. According to Ayurveda-the ancient natural health care system of India - proper diet and digestion are one of the major pillars of health. Altered digestive functioning can lead to the production of *Ama*, a toxic material that initiates and promotes disease processes throughout the body. Optimal functioning of the G.I. tract requires proper mucosal integrity and a balanced microflora. Compromised mucosal integrity which leads to 'leaky gut syndrome,' and imbalances in the microflora known as 'dysbiosis,' result in the formation of *Ama*. *Ama* is also produced at other levels of the physiology, including the cellular level. Excessive formation of free radicals contributes to the formation of *Ama*. A variety of free radicals and reactive oxygen species (ROS) are produced during cellular metabolism. Excessive amounts of these reactive molecules can cause damage, starting the disease process. They are believed to be causative agents in nearly every disease. The ability to control their concentrations may be helpful for the prevention and treatment of many disorders. Antioxidants 'scavenge' free radicals and ROS, and render them harmless. Antioxidants can be lipid- or water-soluble; some are produced in the body and others are obtained from food or dietary supplements. Natural antioxidants range from vitamins to enzymes to herbal mixtures. Powerful antioxidants are present in the bioflavonoids found in concentrated form in Ayurvedic herbal mixtures known as *Rasayanas*. The use of these *Rasayanas* will be helpful in neutralizing the excessive free radical activity that contributes to *Ama* formation. However, the accumulated *Ama* in the body will not be removed by the use of *Rasayanas* and antioxidants alone. Other Ayurvedic methodologies are required to eradicate accumulated *Ama*. *Rasayanas* are best utilized to neutralize ongoing damage to the physiology and regenerate the system.