

Santhigiri Ayurveda Medical College

NEWSLETTER

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Editorial

Gurucharanam.saranam

Greetings of peace and well-being from the family of Santhigiri Ayurveda Medical College, Palakkad, Kerala on the special occasion of 5th International Day of Yoga.

Yoga, the principle of union of the phenomenon and the Noumenon, has a great journey from pre-Vedic period to present era. It is during the period of Patanjali, the incarnation of Lord Aadi S'esha, the scattered principles of yoga were systemically presented in the form of Yogasootra, and Raajayoga is its central idea. 11 December, 2014 is one of the golden moments in the history of yoga, on which day the United Nations declared 21st June to be celebrated globally as International Day of Yoga annually. It is unfortunate that yoga has not been accepted by all the sections of Indian society as a part of their daily life mainly due to negative political reasons. But the western society gradually accepted it during the same time and the contributions of Maharshi Mahesh Yogi, Sivananda Maharaj, Baba Ramdev Maharaj, Aacaarya Dr. Nagendra etc are laudable in this regard. It is the political will and sincere efforts of our beloved and honourable Prime Minister Sri Narendra Modiji which realized our dream of global acceptance for yoga.

Theme of this special day for this year is "Climate Action". One may wonder how Yoga can contribute in improving the present low climatic conditions. No doubt it's the Yoga, as the word it self explains, which can make one awaken to realize ones real nature of universal being. At present the society is suffering from lack of this realization which is being resulted in adverse conditions in society at different planes like global warming, death of rivers, soil pollution by chemicals and plastic etc at geographical level, lack of interpersonal relations resulting into terrorism, substance use disorders etc, at sociological level and harmful technological invasion into one's personal life completely destroying one's individuality at personal level. Proper understanding and practice of yoga can solve all these problems as it transcends the individual being into the universal being.

Many times yoga and meditation are misunderstood as physical

exercises, breathing exercises etc and tools for getting good sleep and physical relaxation. There need not be any hesitation in accepting the findings of present research works on yoga which claim to be beneficial in curing as well as preventing physical and mental problems because the ambrosia which is for immortality can definitely make one physically healthy and mentally tranquil. Yoga is a path for transforming a human being from state of a social animal to the highest state of universal being. To understand universal relationship among all the beings there should be personality integration. Among eight steps of Yoga, by following the first two steps i.e., Yama and Niyama one's personality is integrated and one can feel the universal relationship. That's why practice of these two steps are highly essential for any one to get the benefits of other steps of asht'aa~n~gayoga. Whatever universal relationship is felt during this stage can be realized directly by following the last three steps viz., Dhaaran'a, Dhyaana and samaadhi. The three intermediary steps i.e., Aasana, Praan'aayama and Pratyahaara make one suitable physically and mentally to strive and practice the last three steps.

So let's practice and spread Yoga in its true spirit and realize its fruits.

"Asan~gofham asan~gofham asan~gofham punah punah
Saccidaanandaroopofham ahamevaahamavyayah".

Dr. G. Nagabhusanam
Chief Editor

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DEPARTMENT OF RASA S'AASTRA EVUM BHAISHAJYA KALPANA

Ghr'ta Vs Liposome - A Review Of Conventional And Modern Drug Delivery System

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Introduction

Sneha kalpana is an impeccable part of the ayurvedic pharmaceutical industry. Ghee is considered to be the best one among different sneha kalpana. Ghee is extensively used for medicinal as well as culinary purposes. Ghr'ta has snigdha, s'eeta, sara, madhura qualities. Goghr'ta is an excellent base for preparing ayurvedic medicines. The virtues of this clarified butter and its ability to reach within the deepest of tissues even in the brain tissue, make it an ideal base to prepare ayurvedic formulations targeting specific tissues of the body. There are many other uses of ghr'ta in ayurvedic science that makes it an important one among all pharmaceutical preparations. It is considered to be one among the dravya which must be consumed regularly. Cow Ghee has vishahara and rasaayana, medhya etc properties. It is the only sneha which can undergo different samskaara. (C S Chi 31/13)

There are 8 types of ghr'ta is mentioned in ayurveda. Go ghr'ta is considered to be superior among all types. It is widely used for preparing various medicated ghr'ta. Ghr'ta thus is an effective carrier to deliver the drug in to the targets.



The Sneha Kalpana process in action @ Krya - careful, slow cooking of a mixture of herb and fruit juices, decoctions and herb pastes and oils for over 8 hours

Ayurvedic pharmaceutical science uses ghr'tam in the form of sneha kalpana, where kalka, sneha, drava is taken in the ratio of 1: 4: 16 and heated till it attains proper siddhi lakshan'a.

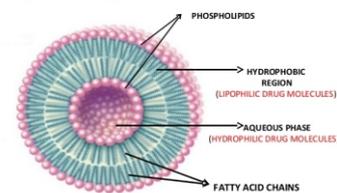
LIPOSOMES

A liposome is a spherical vesicle having at least one lipid bilayer. The liposome can be used as a vehicle for administration of nutrients and drugs. It is prepared by disrupting biological membranes.

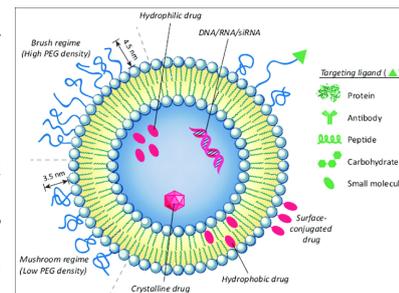
Liposomes are most often composed of phospholipids, especially

phosphatidylcholine, eggphosphatidylethanolamine etc. A liposome design may employ surface ligands for attaching to unhealthy tissue. The major types of liposomes are the multilamellar vesicle (MLV, with several lamellar phase lipid bilayers), the small unilamellar liposome vesicle (SUV, with one lipid bilayer), the large unilamellar vesicle (LUV), and the cochleate. Liposomes can be created from cholesterol and natural non-toxic phospholipids.

STRUCTURE OF LIPOSOME



It is hydrophobic and hydrophilic in nature. Liposome's properties considerably vary with lipid composition, surface charge, size, and the method of preparation. Bilayer components determines the 'rigidity' or 'fluidity' and the charge of the bilayer. It is first described in the mid-60. Since then, liposomes have made their way to the market. Among several drug delivery systems, liposomes characterize an advanced technology to deliver active molecules to the site of action.



SIMILARITIES OF GHEE AND LIPOSOMES

It seems that these two dosage forms, Sneha Kalpana and Liposome are very much similar, as both are lipoidal in nature.

In Sneha paaka, specific ratio of kalka, sneha, drava is taken and heated in a specific temperature. Principle of snehapaaka is to transfer active constituent of herbs in lipid and water according to its solubility.

Preparation of liposome is very similar to the pharmaceutical principle of sneha kalpana. In the preparation of liposome heating is not compulsory. Methods such as sonication, homogenization, shaking, etc., are also applied. The lipid-soluble compound remains in the outer lipid bilayer and water-soluble component remains in the middle aqueous space.

Name of the content	Action
Phosphatidylcholine (PC)	- Reduces cholesterol. Act on toxins.
Phosphatidylethanolamine (PE)	- Anti-bacterial effect.



Phosphatidylinositol (PI) - Preventive role in cancerous growth.

Phosphatidylserine (PS) - Prevent diabetes, obesity, atherosclerosis.

Phosphatidyl cholines is major type of lipids which is present in liposomes and also in ghrta. Phosphatidylcholines (PC) are a class of phospholipids that incorporate choline as a headgroup. They are also a member of the lecithin group of yellow-brownish fatty substances occurring in animal and plant tissues. Phosphatidylcholines are found in all plant and animal cells. Phosphatidylcholine also plays a role in membrane-mediated cell signalling and PCTP activation of other enzymes along with other

actions mentioned above.

CONCLUSION

By keeping above facts in mind, liposomes are modified form of the Sneha paaka. Concept of Sus'ruta is note worthy here. He proposed that man is made of sneha. (S. S Chi. 31/3)

Since man is made up of sneha, it is well understood that sneha is the best medium to transport a drug to the target site than any other medium. Once again aayurvedic science is proving the scientificity of saamaanya- vis' esha siddhaanta.

Bhasma Pareeksha And Its Significance In Relation To Contemporary Testing Procedures

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Introduction

The word bhasma can be split up as 'bhas' which means shine/lusture and 'sma' which means shining in the past or one which has lost the lusture. A specific state of metals, minerals and other substances which is obtained after frequent trituration with juices and decoction of drug and burnt with appropriate fire and which destroys the original shape, colour, lusture, heaviness, taste of the substances and in appearance resemble the ash.

Tests for bhasma-according to classics

- Rekha poorn'atva
- Vaaritarā
- S'lakshan'atva
- Laghutva
- Gatarasatva
- Nis'candratva
- Avaami
- Nirdhooma
- Apunarbhava
- Niruttha

Rekha poorn'ata

Bhasma enters the furrows of the finger on taking it in between an~gusht'ha and tarjani and rubbing in between. This indicates the minuteness and fineness of bhasma particle. Size is 35µcm which is capable of lodging the bhasma within the furrows.

Vaaritarā

Bhasma floats on the surface of water on taking it in between an~gusht'ha and tarjani and pressing it and placing water. This indicates the microfineness of particles and bulk density of bhasma which is the reason for floating on liquid. Bhasma is so fine that it cannot break the surface tension of water.

Uttama

Bhasma is placed slowly upon the water, it floats and does not sink even after placing grains on it (floats like swan). This indicates the lightness and microfineness of bhasma.

S'lakshan'atva

Bhasma should be smooth and devoid of rookshata.

Laghutva

It should be light in weight. This property makes easy absorption and assimilation of bhasma in system.

Avaami

This is specially performed for taamra and svarn'amaakshika bhasma. Bhasma is placed at the tip of the tongue in a minute dose. It should not produce any nauseating and vomiting features. This indicates the acceptability of bhasma to the system.

Nirdhooma

One pinch of bhasma sample is taken and put on red hot charcoal. The test is positive for nirdhooma if no fumes are produced then, this helps to check whether it has any apakva dhaathu.

Nis'candratva

One pinch of bhasma is taken and rubbed in between tarjani and an~gusht'ha, then it is observed for any shiny particles under sunlight. The sample is genuine if no shining particles are seen and it indicates complete conversion of substance to bhasma.

Gatarasatva

One pinch of bhasma is kept over tongue and observed for any perception of taste. One can confirm that the bhasma is properly



formed if no taste is felt.

Apunarbhavatva

Bhasma is mixed with mitrapan`caka and subjected to heat. There should be no reoccurrence of metallic form of bhasma after giving the same grade of heat with which particular bhasma is formed. This test helps to detect any loose bondage in the compound formed after maaran`a. Mitrapan`caka acts as a source of carbon at that particular temperature. Unstable metallic compound can reduce to metallic state during this test by carbon reduction process.

Niruttha

Bhasma should not get mixed with raupya on heating it along with raupya. This helps to know whether the metal is completely formed into bhasma.

PHYSICAL-CHEMICAL METHODS

◆ Organoleptic characters

PH

◆ Ash value

- a) total ash value
- b) acid insoluble ash
- c) water soluble ash

◆ Specific gravity

◆ Moisture content(L.O.D)

◆ Solubility

◆ Particle consistency

Namburi phased spot test (NPST)

This test is helpful in quality assessment of bhasma as per standards of Rasas`aastra. Reagents and reacting papers are specific for specific bhasmas. This provides a differential qualitative identification of each bhasma by a specific coloured spot which is unique for only that bhasma. A prototype for each bhasma is established as a standard in the form of a specified coloured spot and will be useful for people who are doing research on bhasma.

The principle of N.P.S.T is based on liquid chromatography, helps for differential identification of each bhasma from other bhasma having same element as the main constituent.

Instrumental methods of analysis are done by using analytical instruments. There are many instruments that are used for analysis of minerals and metals by minerologists. Some of the instruments that are used at present for the analysis of Rasas`aastra samples(raw) and preparations are:

XRD- Xray Diffraction

Helps to determine percentage of material in crystalline form versus amorphous form. The crystal size, structure, crystal defects

and phase of the compound can be identified. This analysis helps to measure the sample purity and to differentiate between various oxide forms.

SEM_EDAX: Scanning Electron Microscopy and Energy Dispersive X-ray Spectroscopy:

SEM helps to evaluate the chemical nature, size and morphology, composition and electrical conductivity of the conducting sample.

EDAX is an analytical technique used to evaluate the elemental analysis, foreign body analysis and chemical characterization of the product.

FT-IR- Fourier Transform Infra Red Spectroscopy

This analysis provides special information about chemical bonding and molecular structure. This is capable of identifying organic functional groups and often specific organic compounds. This technique can determine the quality and consistency of a sample, amount of components present in a mixture and it can also identify unknown material.

ICPMS (Inductively Coupled Plasma Mass Spectroscopy)

This analysis is helpful for the bulk analysis of major, minor or trace constituents. Determines extremely wide range of elements from major components to very low detection limits. It is also helpful for making out multi element analysis.

Other types are

- a) ICP AES(atomic emission)
- b) ICP OES (optical emission)

AAS- Atomic Absorption Spectroscopy

It is the technique for determining the concentration of particular metal element in the sample. Trace metal analysis of Hg, Ag, Au, Cu, Pb and Sn can be detected with high sensitivity. This also help to check whether the toxic elements are lower than specified.

TEM-Transmission electron microscopy

This technique provides an outstanding image. Also characterize crystallographic phase and orientation. It also helps in nanoparticle characterization.

Conclusion:

Bhasmeekaran`a is the process by which purified and detoxified metals and minerals are transformed to absorbable ,adaptable and assimilative form. Apart from the classical procedures the modern analytical techniques are also needed to standardize bhasma. This will help for the global acceptance of Rasas`aastra compounds. Also no single instrument source is best for all application. Hence specific method is selected in accordance with the requirements of the desired analysis.



Medical Bulletin

Hridayam - For little hearts

Hridayam is a web based solution for system management initiated by Government of Kerala under National Health Mission to support children with Congenital Heart Disease (CHD). Critical congenital heart disease (CCHD) is group of the seven most severe congenital heart defects. Today CHD happens to be the largest treatable cause of death amongst infants. Hridayam can be used as web based registry for CHD cases across Kerala, monitoring the progress of program envisaged for management of children with CHD, identify the bottlenecks for implementing the protocols established at any point, understand the case status and response time for systems in place and ultimately the outcome of the program. Children under 18 years of age are benefited under this programme. Registration can be done through <https://hridayam.in>.

Sanskrit Alphabets with English Transliteration Key

अ	आ	इ	ई	उ	ऊ
a	aa	i	ee	u	oo
		ए	ऐ	ओ	औ
		e	ai	o	au
ऋ	ॠ	ऌ	ॡ	अः	ह
r'	rr'	l'		m	
क	ख	ग	घ	ङ	
ka	kha	ga	gha	ng	
च	छ	ज	झ	ञ	
ca	cha	ja	jha	ña	
ट	ठ	ड	ढ	ण	
t'a	t'ha	d'a	d'ha	ṇ'a	
त	थ	द	ध	न	
ta	tha	da	dha	na	
प	फ	ब	भ	म	
pa	pha	ba	bha	ma	
य	र	ल	व		
ya	ra	la	va		
श	ष	स	ह	क्ष	ज्ञ
s'a	sha	sa	ha	ksha	jña

Events

Inter Ayurveda college quiz competition winners

Mr. Sooryanarayanan, Final BAMS and Harikrishnan VP, Second BAMS secured 1st position in the Inter Ayurveda college Quiz Competition held at Vaidyaratnam Ayurveda College, Ollur on 8th May 2019.

Medical Camp, Karakurissi



As part of Riddhi 2019, the convocation of 12th batch students, a medical camp was conducted at karakurissi Gowrisankar auditorium, karakurissi, Mannarkkad in association with Karakurissi NSS karayogam on 21st May 2019. Dr. G. Nagabhushanam, Dr. Sasmitha P, Dr. Kiran K Prasad and a team of House Surgeons participated in the camp which benefitted nearly 100 patients.



Annual Sports Day

The annual sports day was conducted at the Santhigiri Ayurveda Medical College ground on 30th May 2019. The event was flagged off with Marathon Event followed by various track and field events. Dr. G. Nagabhushanam, Principal, inaugurated the celebrations and the students and house surgeons of the college participated in the events.



Vaikhari- College magazine released



Vaikhari- 'The last stage of prolongation of sound' - The college magazine containing the extracts of the events and the talents of the students, published by the SAMC Students Union 2017-18 was released on 31st May 2019 in the presence of the Principal, management representatives, PTA members, students and staff at the college auditorium.



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