

सप्टेंबर २०२३

या अंकामा एकूण
१५ पाने आहेत.



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Ayurvediya Masik

आयुर्वेद रसशाळा, पुणे चांधी गुणकारी व उपयुक्त उत्पादने...



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दाह, ज्वरात विचार,
जठराग्नात आत टाळण्यासाठी,
शीत व कडिलिमा होऊन केलावर
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ओके दुखणे-दामध्ये
पित्तामज वटी वरील उपयुक्त.



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September 2023

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Ayurvediya Masik



॥ श्री धन्वंतरये नमः ॥

राष्ट्रीय शिक्षण मंडळ, संचालित

आयुर्विद्या
मासिक



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AYURVIDYA
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वर्धापनदिनानिमित्त हार्दिक शुभेच्छा ! - ३ सप्टेंबर २०२३

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वाचाल तर वाचाल!

डॉ. दि. प्र. पुराणिक

नुकताच म्हणजे दि. १२ ऑगस्ट २०२३ रोजी भारतभरात "National Librarian Day" संपन्न झाला. डॉ. एस. आर. रंगनाथन हे ग्रंथालय शास्त्राचे जनक मानले जातात. त्यांनी ग्रंथालय शास्त्र विकसित केले, ह्याचा प्रचार केला आणि ह्यासाठीच त्यांचा जन्मदिन म्हणजे १२ ऑगस्ट हा दिवस "National Librarian Day" म्हणून संपन्न केला जातो. ह्या दिवशी भारतभरात विद्यापीठे, शैक्षणिक संस्था, सार्वजनिक वाचनालये, ग्रंथालये ह्यांच्यातर्फे विविध कार्यक्रमांचे आयोजन केले जाते, नवनवीन उपक्रमांचा श्रीगणेशा केला जातो. भारतात १२ ऑगस्ट ह्या दिवशी राष्ट्रीय लायब्ररीअन दिन संपन्न होतो तर जगभर "१६ एप्रिल" हा दिवस "Librarian Appreciation Day" म्हणून संपन्न केला जातो. ह्यावर्षीच्या नॅशनल लायब्ररीअन दिनाचे घोषवाक्य होते. "There is more to the story" आणि त्यानिमित्ताने "२३ एप्रिल २०२३ ते २९ एप्रिल २०२३" ह्या संपूर्ण सप्ताहभर विविध कार्यक्रम आयोजित करण्यात आले.

भारतात पहीले सार्वजनिक ग्रंथालय कोलकता येथे सुरू झाले. तर प्रथम ग्रंथपाल म्हणून श्री. बी. एस. केसवन ह्यांचे नाव घेतले जाते. भारतील पहिल्या महिला ग्रंथपाल म्हणून श्रीमती कल्पना दासगुप्ता ह्यांचे नाव घेतले जाते. लहान अथवा मोठ्या ग्रंथालयांचे यश-अपयश हे प्राधान्याने ग्रंथपालावर (Librarian) अवलंबून असते. आदर्श ग्रंथपाल हा उच्चविद्याविभूषित असणे आवश्यक असते आणि त्याच्याठायी विशेष गुणवत्ता असल्यास ग्रंथालयाचे यश उंचावत असते. ग्रंथपाल ह्यास ज्ञानलालसा असावी आणि सतत शिकण्याकडे प्रवृत्ती असावी लागते. सर्वसाधारण वाचक वर्गात मिळून मिसळून वागणारा असावा आणि त्यांच्याशी मैत्रिचे संबंध ठेवणारा असावा. तसेच नैतिक तत्वांचे पालन करणारा असावा. वाचकांशी त्याची वागणूक सौजन्याची असावी. तसेच त्याच्या ठायी संयोजन आणि आयोजन ह्या गुणवत्ता असल्यास असा ग्रंथपाल कर्तबगार आणि यशस्वी नावाजला जातो.

ग्रंथपाल हा कितीही उच्चविद्याविभूषित असला आणि आवश्यक विशेष गुणवत्ता प्राप्त असला तरी त्यास आव्हानात्मक वाटणारे समृद्ध ग्रंथालय असणे आवश्यक असते. विद्यापीठे, मोठ्या शैक्षणिक संस्थांची ग्रंथालये, तसेच सार्वजनिक ग्रंथालये ही माहिती तसेच ज्ञानाची आगारेच असतात. समाजात, विद्यार्थ्यांमध्ये साक्षरता, ज्ञानसमृद्धता आणि एकूण समाजात सुसंस्कृतपणा निर्माण करण्याचे कार्य

ग्रंथालये करत असतात. वाचक वर्गात एकमेकांत वैचारिक देवघेव वाढविण्याचे कार्य ग्रंथालये करतात. तसेच आबालवृद्धांमध्ये ज्ञानलालसा जागृत करणारे, पुस्तकांविषयी कुतुहल करणारे महत्वाचे स्थान म्हणजेच ग्रंथालये होत. महाविद्यालयीन विद्यार्थी तसेच अध्यापक वर्गासाठी ग्रंथालये म्हणजे अभ्यास, वाचन ह्यासाठी विशेष वातावरण निर्माण करणारी केंद्रेच असतात. इतर विद्यार्थी अभ्यास आणि वाचन करताहेत म्हटल्यास बाकी विद्यार्थी देखील वाचन करण्यास प्रवृत्त होतात. त्यांच्यामध्ये वाचन व चिंतनाची एकप्रकारची मानसिकता निर्माण होते.

आदर्श ग्रंथालये ही विविध प्रकारच्या विषयांच्या, लेखकांच्या ग्रंथांनी समृद्ध असतात. त्यात नुसतेच ग्रंथ, पुस्तके नसतात तर संशोधनासाठी उपयुक्त लघुप्रबंध, (Dissertations), प्रबंध (Theses), मूळ ग्रंथ आवृत्या (Manuscripts) उपलब्ध असतात. ह्याचबरोबर Audio, Audiovisuals, digital data इत्यादी उपलब्ध असतो. सर्वसाधारण कोणत्याही एका व्यक्तिस अनेक गोष्टी स्वतः खरेदी करणे शक्य नसते आणि व्यवहारीक दृष्ट्या बरोबर नसते. त्यामुळेच ग्रंथालयाचे महत्व जाणवते. ह्याखेरीज नियतकालीके (Journals), आंतरराष्ट्रीय नियतकालीके (International Journals) इत्यादी वाचावयास, बघावयास, ऐकण्यास, हाताळण्यास मिळणे, तसेच सोबत घेवून जाणेही शक्य होते. कोणत्याही प्रकारचे (Literary, clinical) संशोधन करणाऱ्या व्यक्तीच्या दृष्टीने ग्रंथालय म्हणजे एक पर्वणीच होय. त्यातून ग्रंथपाल कुशल आणि ज्ञानी असल्यास संशोधनाच्या कामात महत्वपूर्ण मदत होवू शकते. विशेषतः विषयाशी संबंधित पुस्तके, ग्रंथ, नियतकालीके ह्यातून संदर्भ मिळवून देण्याचे कार्य ग्रंथपालाकडून होवू शकते.

आयुर्वेदातील मूळ ग्रंथ, तसेच त्यानंतरही अनेक आचार्य, विद्वान ह्यांनी लिहिलेले ग्रंथ, सटीक साहित्य ह्यांनी युक्त ज्ञानभांडार अथांग असेच आहे. त्यांचे वाचन सातत्याने केले तरीही ते अपूरे असेच असते. आजही अनेक गुरुजन नित्यनियमाने ग्रंथांचे वाचन करतात. "आयुर्वेद" जाणून घ्यावयाचा तर अलीकडील काळात उपलब्ध 'Google' सारखे किंवा उथळपणे लिहिलेली पुस्तके अजिबातच उपयोगी नाहीत. ह्यासाठीच सखोलपूर्ण, अभ्यासपूर्ण व सातत्याने ग्रंथवाचन करणे अत्यंत आवश्यक आहे असेच सुचवावेसे वाटते.



A Magazine dedicated to "AYURVED" - "AYURVIDYA" To Update "AYURVED" - Read "AYURVIDYA"



Present Scenario Of Ayurvedic Pharmaceutics

Prof. Vd. P. K. Prajapati,

Vice Chancellor DSRR Ayurved University, Jodhpur, Rajasthan.

Background:

Traditional v/s contemporary approach: Classical pharmacy as per relevant literature available in ancient texts was based more on patient centric. The physicians used to prepare medicines for their own subset of patients and as such, we see that the principles of palatability, shelf-life, packaging and community pharmacy were rudimentary and sporadically mentioned. Abundance of raw material for drug manufacturing was also an importance aspect of traditional pharmacy. However, today health care has become a full-fledged sector and has great impact on a nation's economic and growth. It has been diversified into various sectors. Right from pharma, biotech, health technology, medical device to present day health finance, innovation and entrepreneurship. Further, there has also been an advancement in the pharmaceutical technology and drug delivery. As a result, several new dosage forms have come into existence. Moreover, the emphasis on wellness is more prevalent than illness after covid pandemic. Therefore, more pharma companies are venturing into FMCG sector, nutraceuticals, cosmeceuticals etc. The traditional art of Ayurvedic pharmacy has paved way for a more professional pharmaceutical industry which is more consumer and wellness centric.

The world population is increasingly seeking natural and alternative forms of treatment for various ailments and Ayurveda is one of the popular choices. With the rise of lifestyle-related diseases such as diabetes, hypertension, and obesity, Ayurveda's holistic approach to health and wellness is attracting more attention. This has led to an increase in the demand for Ayurvedic medicines and products. Many recent studies and reports clearly explain that the revival of Ayurveda is not restricted to India and China but from Asia to Africa and North America to Europe, Ayurveda is successful in creating a domino impact all across the globe. As per the joint market research of the Confederation of Indian Industry (CII) and Price water house Coopers (PwC), the Indian Ayurveda market is all set to register 16 percent growth (CAGR) till 2025. At present, the size of the

domestic market is INR 30,000 Cr (\$ 4.4 billion), and Ayurveda's market penetration is increasing in both rural and urban areas. The report also conveys that 77 percent of Indian households are using Ayurvedic products as against 69 percent in 2015. The major chunk of the domestic revenue (75 percent) comes from the sale of Ayurveda products whereas services/consulting contribute only 25 percent to the total business. The Ayush industry has witnessed a sales growth of almost 17% between 2014 to 2020. While talking about the present scenario of Ayurvedic pharmaceutics, it can be visualized under the following sections:

A) Regulatory Measures B) Education Sector
C) Research and Innovation D) Digitalization

Regulatory Measures : Various Governing bodies such as the Ministry of AYUSH, ASUDTAB (Ayurveda, Siddha, Unani Drugs Technical Advisory Board), ASUDCC (Ayurveda, Siddha, Unani Drugs Consultative Committee) have implemented several acts and rules viz. Drug and Cosmetic Act 1940 and Rule 1945, Drug and magic remedies act (Objectionable Advertisement) 1954, Pharmacy Act, 1948, the narcotic drug and psychotropic substance act, 1985 etc. in India for regulation of Ayurvedic Drugs. They are responsible for new drug approval, clinical trial, manufacturing, sale and distribution and post-marketing surveillance. Many amendments in these regulatory laws are being taken and implemented from time to time as per the need of the moment. However, unlike conventional medicines, the Essential commodities act, 1955, and the Drug price control order, 2022 have not been implemented in the sale and distribution section to date. A recent study on Shilajatu by Singh R et. al reported that the cost of Ashuddha Shilajatu was observed in the range of Rs 350 to Rs 2200/Kg and Shuddha Shilajatu is being traded at the price of Rs. 1500 to Rs 10,000/Kg in different markets of India. Similarly, one of the most frequently used herbs i.e. Haritaki, has multiple phenotypes, and each of them possesses different pharmacological activity. The production, as well as the availability of every phenotype, varies, therefore, adulteration and a wide range of price variations have been noticed by

different traders. Moreover, in relation to the finished product especially the formulation having high altitude plant, controversial plant, endangered plant or metals and minerals are found to be sold in a wide range of price variations in the market. To increase the availability and affordability of essential Ayurvedic medicines to the general population, these two laws are very much useful. Additionally, it creates the right balance between consumer and producer interests. Also, it can answer the uncertainty of the quality of drugs due to price variation.

Apart, there are some important initiatives undertaken by India toward voluntary standards/certifications for Ayush which include WHO-GMP Certification of Pharmaceutical Product (CoPP), Ayush Mark Scheme (Ayush Standard Mark and Ayush Premium Mark). The CoPP is issued under the WHO-GMP Certification Scheme for the purpose of international commerce by the Central Drugs Standard Control Organization (CDSCO). Till date, 47 enterprises have obtained this certificate. Ayush Standard Mark is based on compliance with domestic regulatory requirements where as Ayush Premium Mark imposes a higher level of restrictions on permissible limits of contaminants, thus designed for international markets with stricter standards.

In addition, the Bureau of Indian Standards (BIS), the national standards body and member of ISO, has also set up a technical committee on Ayurveda at the behest of the Ministry of Ayush and has taken the initiative to formulate ISO standards on Ayurveda with ISO. A Working Group (WG-10) on 'Traditional Medicine' has been created in the ISO/TC-215 'Health Informatics'. Under development is the ISO/CD TR 4421 (Introduction to Ayurveda). Once formulated, certification to ISO standards can be a useful tool to add credibility to Ayurvedic products.

Education Sector : Various Certificates, diplomas, degree, value-added courses, and Continuing Education Programs that integrate Ayurvedic pharmacy education with modern pharmaceutical sciences such as pharmacology, pharmaceutical chemistry, pharmacognosy, pharmacokinetics, and cosmetology are being offered by some educational institutions. This approach helps students to understand the scientific basis of Ayurvedic medicines and their interactions with the human body. This integration also allows students to gain a

comprehensive understanding of healthcare systems and promotes an interdisciplinary approach to patient care. Hands-on training and pharmacy visits are essential parts of Ayurvedic pharmacy education that are being emphasized by the NCISM curriculum.

The courses offered in Ayurvedic Pharmacy are currently in their early stages, and there is a need for a comprehensive and well-designed strategy to improve the quality of education. Special attention should be given to the admission criteria for these courses. It is essential to make it mandatory for students with a medical background to enroll, considering the demand for skilled professionals and the global expansion of Ayurveda. Moreover, there is a requirement to enhance the teaching methods by incorporating various learning methods such as participatory learning, experiential learning, Interdisciplinary learning, self-directed learning, project-based learning, customer-centric as well as evidence-based learning to stay updated with the latest advancements in the field and to align with the growth of the Ayurvedic drug industry.

Research and Innovation : Several research works have been conducted in the area of Ayurvedic pharmaceuticals to explore the pharmaceutical, analytical, therapeutic and toxicological aspects of various medicaments. In the sector of novel drug delivery systems, a number of innovative approaches viz. Nanotechnology-based delivery systems, microencapsulation techniques, etc. have been investigated to enhance the efficacy and bioavailability of Ayurvedic medicines. Moreover, Ayurvedic drug development is progressively incorporating pharmacogenomics to understand genetic variations and how they influence drug response. Besides, the application of technologies like bioinformatics and data analytics aid in the identification of bioactive compounds, target identification, and prediction of drug interactions in the sector of Ayurvedic drug development. Ayurvedic drug manufacturers are increasingly seeking collaborations and certifications to meet global regulatory standards and expand their markets. Moreover, efforts have been made to protect traditional knowledge and intellectual property associated with Ayurvedic drug development. Patenting of specific formulations and processes is being explored to ensure fair recognition and benefits of traditional

communities.

Ethnopharmacological studies have been carried out to document traditional knowledge through interactions with traditional healers and local communities to identify and validate medicinal plants and their products. In addition, the concept of Repurposing drugs in Ayurveda refers to the practice of using existing or known Ayurvedic drugs for new therapeutic indications different from their primary uses. This emerging concept aligns well with the holistic nature of Ayurveda, where medicines are often tailored to individual patient's needs and health conditions. However, it is important to note that while repurposing drugs has its advantages, rigorous scientific research is essential to establish the safety and efficacy of any new therapeutic use. The wellness segment which comprises personal care products (soap, toothpaste, beauty, cosmetics, toiletry, etc.) and health tourism, is growing. Many corporate companies such as Himalaya, Dabur, and Emami have focused on it for revenue generation. It is also the main component of export growth of AYUSH products especially to countries such as the USA where AYUSH products are permitted only as health supplements.

Digitalization : Lots of Drug-related (Administration and supply chain) digital initiatives have been taken by Ministry of Ayush such as e-Aushadhi (portal) for online licensing of AYUSH Drug and to create a transparent system for procurement, storing, and distributing high-quality drugs making it a complete space for drug supply chain management System in AYUSH. Another portal is AYUSH Suraksha for Reporting adverse

drug reactions and misleading advertisements. Apart, with the rise of e-commerce, several online platforms are emerging to offer Ayurvedic products to consumer worldwide. This online accessibility contributed to the global dissemination of Ayurvedic Pharmaceuticals.

Conclusion: Ayurveda Pharmceutics sector is very diverse and dynamic. It holds immense potential for growth and revenue generation. Globalization of Ayurveda can be realized only by promoting this sector through centric approach of industry and academia alike. Many changes have been observed in the pharmaceuticals by adaptation of recent technologies by which the different dosages forms are came into practice .

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डॉ. सरोज विनय पाटील “टिळक” च्या प्राचार्यपदी

रा. शि. मंडळ संचलित टिळक आयुर्वेद महाविद्यालयाच्या प्राचार्य पदावर राष्ट्रीय शिक्षण मंडळाच्या नियामक मंडळाने टिळक आयुर्वेद महाविद्यालयातील ज्येष्ठ प्राध्यापक डॉ. सरोज पाटील ह्यांची नियुक्ती केली. गेल्या दहा वर्षांपेक्षाही जास्त काळ प्राचार्यपदावर असलेल्या डॉ. सदानंद देशपांडे ह्यांच्याकडून दि. ३१ जुलै २०२३ रोजी डॉ. पाटील ह्यांनी डॉ. देशपांडे ह्यांच्याकडून प्राचार्यपदाची सूत्रे विधिवत हाती घेतली.

शास्त्रीय रचना विभागात विभागप्रमुख पदावर कार्यरत असलेल्या डॉ. सरोज पाटील ह्यांना उपप्राचार्य पदाचा प्रदीर्घ अनुभव आहे. त्यांच्या अनुभवाचा त्यांना प्राचार्य पदावर काम करतांना निश्चितच मोठा लाभ होणार आहे. डॉ. सरोज पाटील “आयुर्विद्या” मासिक समितीच्या दीर्घ काल सदस्य म्हणून कार्यरत असून आयुर्विद्या, आरोग्यदीप दिवाळी अंकासाठी त्यांनी भरीव योगदान दिले आहे.

राष्ट्रीय शिक्षण मंडळ, आयुर्वेद रसशाळा, नानल हॉस्पिटल, शेठ ताराचंद हॉस्पिटल, आयुर्विद्या मासिक, कृ. ना. भिडे आयुर्वेद संस्था ह्यांच्या वतीने प्रा. डॉ. सरोज पाटील ह्यांचे हार्दिक अभिनंदन व शुभेच्छा!

अभिनंदन!





Ayurvedic Pharmaceuticals: Classical To Current Trends

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Modern Pharmaceuticals is the overall process of developing a new chemical entity into an approved therapy that is safe and effective in treating or preventing disease, whereas Ayurveda Pharmaceuticals is mainly based on classical and traditional formulations which are in practice more than 10000 years. In ancient times, Vaidyas used refer classics and collect raw material by themselves and prepare medicines for the patients by themselves. In modern era of metropolitan crowded cities, the scenario has changed drastically. Ayurveda Pharmaceuticals starts with five basic concepts (Panchavidha Kashaya Kalpana) and goes upto variety of 130+ different types of dosages.

The Ayurvedic Pharmaceuticals can be divided in two distinct streams -namely Bhaishajya Kalpana (only herbal preparations) and Ras Shashtra (processing herbs plus metal minerals). History of the 'Bhaishajya Kalpana' starts way back from period of Vedas whereas the Ras Shashtra is considered to have been active around 8th century A.D., although the period of first 'Naagaarjuna' can be traced back to 100 B.C. (Siddhinandan Misra-1990). Upto Samhita Era, the use of metals and minerals was very limited and was principally based on plants whereas in Ras Shashtra instituted drugs prepared solely from poisonous plants, minerals and metals.

In ancient times, Ayurved was mainly state sponsored and private practitioner Vaidya were self-disciplined and few references are available of drug regulations. Since 20th century onwards, the scenario has drastically changed. New areas in Ayurveda Pharmaceuticals has emerged since last 100 odd years. They are: Ayurved manufacturing industry, Regulations, Ayurved Pharmacy Education and Ayurveda Market.

1) Ayurveda Industry: Since last 100 plus years, Ayurveda industry has emerged remarkably. Though initially the progress was slower than modern pharmaceuticals but it has now picked up a pace. In the initial stage, old companies like Shree Baidyanath, Shree Dhoot Papeshwar Ltd, Zandu

reality, Sandu Ltd. etc were formed which were mostly run by an experienced Vaidya or the family. Later after the D and C act came in the force for Ayurveda Drugs, the scenario started changing. Most of the pharma companies started to hire technical experts and export market also getting developed. For now companies exports drugs as Ayurvedic medicine in 10+ countries and as food supplements or herbal products for external uses in 75 plus countries. The growth of the market is tremendous in last decade. As per the research report on Ayush Sector by Forum on Indian Traditional Medicine (FITM) under Research and Information System for Developing Countries (RIS), the market size of Ayush industry is US\$ 18.1 billion (INR 1,49,451 Crore as per current INR-Dollar rate) in 2020 whereas it was US\$ 2.85 billion (INR 23,532 Crore as per current INR-Dollar rate) in 2014-15 (Goraya and Ved). As per the report of Research and Information System for Developing Countries (RIS), on 'Ayush Sector in India: Prospects and Challenges', the global market size of the herbal sector was estimated at US\$ 657.5 billion (INR 54,28,977 Crore as per current INR-Dollar rate) in 2020. In terms of overall exports, the total Ayush export of India has increased from US\$ 1.09 billion (INR 9,000 Crore as per current INR-Dollar rate) in 2014 to US\$ 1.54 billion (INR 12,715 Crore as per current INR-Dollar rate) in 2020. The Ministry of Ayush in cooperation with Ministry of Commerce and Industry has set up an Ayush Export Promotion Council for medicines and products of Ayurveda, Homoeopathy, Siddha, Sowa Rigpa and Unani systems and services of the Ayush systems. The "Ayush Export Promotion Council" has been registered under section 8(4) of the Companies Act 2013 on 04.01.2022 under the Ministry of Ayush in support of the Ministry of Corporate Affairs to tackle the obstacles for registration of Ayush products abroad, undertaking of market studies and research activities abroad.

2) Regulations : Initially the Ayurveda industry was very primitive and not properly regulated. The Drugs and Cosmetics Act, 1940 is an act of the

Parliament of India which regulates the import, manufacture and distribution of drugs in India. The primary objective of the act is to ensure that the drugs and cosmetics sold in India are safe, effective and conform to state quality standards. The related Drugs and Cosmetics Rules, 1945 contains provisions for classification of drugs under given schedules and there are guidelines for the storage, sale, display and prescription of each schedule. The act defines "cosmetic" as any product that is meant to be applied to the human body for the purpose of beautifying or cleansing. The definition however excludes soaps. In 1964, the act was amended to include Ayurveda and Unani drugs. (source: wikipedia). WHO-GMP (COPP) has been given to 31 Ayurvedic Drug manufacturers to facilitate the export of Ayurveda, Siddha, and Unani & Homoeopathy Drugs.

In order to recognize India's age old principles of Ayurveda and the Aahara prepared as per ancient texts, Food Safety and Standards Authority of India (FSSAI) has formulated Food Safety and Standards (Ayurveda Aahara) Regulations, 2022 in consultation with the Ministry of Ayush and notified the regulations in the official gazette on 5th May, 2022.

The regulations define "Ayurveda Aahara" a food prepared in accordance with the recipes or ingredients or processes as per method described in the authoritative books of Ayurveda listed under 'Schedule A' of these regulations. The Regulations, inter-alia, exclude:

- Ayurvedic drugs or proprietary Ayurvedic medicines and medicinal products, cosmetics, narcotic or psychotropic substances.
- Herbs listed under Schedule E-1 of Drugs and Cosmetics Act, 1940 and Rules 1945 there under.
- Metals based Ayurvedic drugs or medicines, bhasma or pishti.
- Any other ingredients notified by the Authority from time to time.
- Food items in daily use (pulses, rice, flour, vegetables) without addition of Ayurveda ingredients.

For ease of identification and assurance about genuineness of the product, all such products shall carry word "AYURVEDA AAHARA" in close proximity to the product; and the specified logo in front of the pack of the label. The label shall carry statutory warning 'ONLY FOR DIETARY USE'. Other labelling requirements have also been

specified.

3) Education : To treat a patient, Vaidya / physician requires quality medicines. To prepare quality medicines pharma companies requires quality pharmacists who has the classical knowledge as well as the modern technologies. With the changing scenario in Ayurved drug manufacturing, a new branch has also emerged in the field of Ayurveda education, Ayurved Pharmacy courses. In 1999 and before, there were thousands of Ayurved Pharmaceutical Industries in India, but there was not a single Educational Institute across the globe for giving professional education of Ayurved pharmacy. With the tremendous upsurge of interest in Ayurved, a need was felt for an intensive training to produce quality Ayurvedic drugs. By the untiring efforts of the Vice Chancellor of Gujarat Ayurved University, Padmashri Dr. P N V Kurup and his team, Institute of Ayurvedic Pharmaceutical Sciences (Renamed as Indian Institute of Ayurvedic Pharmaceutical Sciences) came into the existence on 1st August, 1999. Till 2020, it was a constituent Institute of the globally known Gujarat Ayurved University. Upon centralisation, the institute has gained the identity of Institute of Teaching and Research in Ayurveda (ITRA)-Pharmacy. Now there are more than 10 colleges/institutions including at Banaras Hindu University UP, Kerala, Karnataka, Himachal Pradesh etc. in India where Ayurveda Pharmacy courses are taught. After The parliament of India passed the 'Institute of Teaching and Research in Ayurveda Act, 2020', the Indian Institute of Ayurveda Pharmaceutical Sciences has conglomerated with ITRA and now have become Institute for Teaching and Research in Ayurved-Pharmacy. By promoting Ayurveda Pharmacy education at the institute, ITRA aims at producing Diploma and Graduates of profound scholarship having deed basis of Ayurveda Pharmacy with scientific knowledge in accordance with Ayurvedic fundamentals who would be able and efficient as good Ayurvedic pharmacists, academicians and researchers, fully competent to serve in the medical and health services of the society. Ayurved Pharmacy Graduates / post graduates are serving throughout the Nation in various departments of Ayurved pharmacies, Government Sectors and in the academic Institutes as Entrepreneur, Quality Control Head / Officer, Production Manager, Regulatory Affairs Manager, R and D Head, Principal Scientist, Raw Drug Supplier,

Academician, Pharmacist, Drug Chemist, Assistant Purchase Manager, Medical Representative, Marketing Head etc.

Following are the various courses offered in pharmacy institutes and some of their important information:- (See Table)

Other than this, some of the institutes are trying to introduce dual degree programs like M Pharm Ayurveda + MBA.

Ayurveda Pharmaceutical institutions has made revolutionary changes in the Industry. Right from the quality of products to packaging material, the alumni of Institutions like ITRA Pharmacy are changing the scenario of Ayurved Pharmaceutical sector. They are taught not only the subjects like Shareer, Fundamentals of Ayurveda, Dravyaguna and Ras Shashtra are taught thoroughly, subjects of modern pharmaceuticals are also taught such as: Analytical Chemistry, Pharmacology Pharmacognosy, Quality Control, Pharmaceutical Microbiology, Pharmaceutical Biochemistry, Pharmacochemistry, Plant Physiology, Pharma Technology etc. in addition.

To prepare quality medicines, quality raw material the first and essential step. Charaka Samhita (Charaka Samhitaa Vimana Sthaana 8/87) says raw material of specified type having specific characteristics and therapeutic action, grown on a specific soil in a specific geographical area in specific atmospheric conditions should be collected in a specific season to treat specific diseases and disorders. Vaidyas used to follow this rules strictly as they were procuring the raw material by themselves. Samhitas also advocates that the material grown in the area where a person is living will be more useful for his body. In modern era this practices are drastically changed. The entire journey started from individualized tailor made medicine prepared by a local Vaidya to bulk production of medicine in the industries for patients living in various part of the world. Schedule T of D and C act. Good manufacturing Practices emphasis more on very basic things like cleaning, washing and storages.

The shelf life of the herbal products are now

Name of the course	Time duration	Educational qualification	Title offered
Diploma in Ayurveda pharmacy	2 years	10+	D. Pharm Ayu.
Bachelor in Ayurveda Pharmacy	4 years	12+ with Science Subjects	B Pharm Ayurveda
Masters in Ayurveda Pharmacy	2 years	B Pharm Ayurveda	M Pharm/MSc medicinal Plants
Ph.D. Ayurveda Pharma Sciences	2/3 years	M Pharm/MSc Medicinal Plants	Ph.D. (APS)

increased. Five basic procedures (Panchavidha Kashaya Kalpana) such as Juices, Pastes, Decoctions, cold and hot infusions were mostly prepared fresh and always used within three hours to a day. Due to latest packing, storing and preservation technologies, even this five basic procedures are changed. These Primary Panchavidha Kashaya kalpana are now used even upto six months or a year. Even the secondary Drug dosages are getting modified with the help of modern technologies of drug extractions, packing and preservation and overall Ayurved Pharmaceuticals are in the era of evolution.

The Ayurvedic Pharmacy sector is in transformation era now be it is related to formulation and development, Manufacturing, Packaging, marketing or globalization. After spending trillions of dollars, modern pharmacy experts and researchers has now realized that instead of inventing new chemical entities, it is a wise step to look in to the existing heritage of natural and traditional knowledge.

WHO Global Centre for Traditional Medicine : In the year 2022, Global Centre for Traditional Medicine was set up by World Health Organisation in Jamnagar, Gujarat, India to promote Traditional Medicines as system of treatment for various ailments. The foundation stone for the centre was laid down by Prime Minister of India Mr. Narendra Modi in the presence of Prime Minister of Mauritius Pravind Kumar Jugnauth and Director-General of World Health Organisation Tedros Adhanom Ghebreyesus on 20th April 2022. The centre is considered important as traditional medicine is first line of treatment in many countries. Government offices of 107 WHO member countries will have its offices in the centre.

Objectives of WHO GCTM : Global Centre for Traditional Medicine has been set up with following objectives.

- 1) Use of technology for the creation of traditional knowledge database system.
- 2) To improve the acceptability of traditional medicines, the centre plans to create testing and

certification of these medicines based on International level standards.

3) Becoming a platform for traditional medicine experts from all over the world to join hands and use their experience in developing the medicines.

4) The centre should be able to raise funds to be used in research for the development of traditional medicines.

5) For any patient to get benefitted from both traditional and modern medicines, the centre should design holistic treatment protocols for specific diseases.

Need : The following are the main reasons for setting up the centre :

- Integration of health facilities, working staff and accredited syllabus in Traditional Medicine.
- As components in pharmaceutical products consists of 40% of natural substances, the need for its sustenance and conservation of it biodiversity.
- Usage of artificial intelligence in evidence mapping and also innovating methods used in

traditional medicine.

- In digital arena, applications in mobile phones, online sessions, and other technologies also update information on traditional medicine.

Focus : Global Centre for Traditional Medicine will focus on establishing qualitative standards on practices and products of traditional medicine through following approaches.

1) Evidence based learning system. 2) Collection and analysis of Data. 3) Equity and Sustainability. 4) Optimization of traditional medicine for its sustainable development and working for its contribution towards global health through innovational methods.

When even WHO has focused on establishing qualitative standards on practices and products of traditional medicines this the high time for all Ayurved institutes of the country to promote Quality Ayurved Pharmacy Education for producing quality Ayurvedic products for the betterment of global citizens.



Interpretation Of Standardization Test For Ayurved Medicines

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Standardization is a crucial part of medicine manufacturing. Ayurved medicines were used to be prepared and formulated as per the need of patient and were prepared by Vaidyasthemselves. As medicines were prepared by Vaidyas there was no question of quality assurance. Still every Vaidya in olden days used to have their own standards and parameters for different dosage forms. These parameters were mostly organoleptic which assured the quality of dosage form. Characterization of medicines still remains one of the important part while preparing various dosage form for the patients.

Many references are found in classics regarding the characterization of dosage form. While elaborating churna Kalpana classics have mentioned about the particle size of choorna that it should be very minute and should be subjected from the cloth which can work as mesh. Even while preparing decoction (Quath) they have never mentioned that the powder should be coarse

powder and not fine powder. It makes a lot of difference between a decoction made of coarse powder and fine powder. Another example can be of raskriya. This dosage form is to be prepared from decoction. The yield coming out of the decoction prepared from coarse powder and fine powder, its total solid content and its pharmacology differs a lot. Here standardization plays very important role. Regarding bhasma preparation certain parameters like Rekhpurnatva (bhasma should enter in between lines of finger), Varitaratva (bhasma should float on the surface of water), Apunarbhava (bhasma should not regain its metallic nature after strong heating with jaggery, Abrus precatoriuslinn., honey and ghee) and Niruttha (bhasma should not regain its metallic nature after strong heating with silver). These parameters should be fulfilled for a proper bhasma preparation. These are some of the examples for standardization and characterization of dosage form mentioned in classics.

In bulk manufacturing of Ayurved preparations, commercialization and non availability of some or other ingredients, the process of preparation of Ayurved dosage form may get varied which may not exert expected pharmacological response.

While performing standardization test regarding medicines, it should be very clear that the medicines should not just pass the physico chemical test but the medicines should also exert expected pharmacological response in the biological tissue or the body. Before going for analytical tests organoleptic tests play an important role in defining the quality of drug or raw material.

Morphological/ Organoleptic Parameters - These parameters should be considered for sterility, quality and identity. Morphological denotes colour, odour, taste, size, figure and distinctive features like touch, consistency etc. The characteristics of herbs such as arjun, neem have peculiar bark structure. Colour and smell of Ashwagandha is unique moreover the quality can just be judged by smelling it. Taste of liquorice stem is sweet and that of ginger and pepper are pungent. These characteristics of the herbs are known to a person who is familiar to them.

Considering proper interpretation of Analytical tests, it is necessary to understand the principles behind these tests which co relate with Ayurved dosage forms.

Some of the analytical tests suggest quality of dosage form, its vulnerability to infections, adulterations, its stability and impact of time on its quality etc. These interpretations should be an essential part of each and every study, and the researcher should understand the significance of these tests.

Standardization of Panchavidha kashaya kalpana is very important which is more over neglected in Ayurved research.

The presence of total solids in swaras, quath, phanta and hima, phyto chemicals present in swaras in different seasons, time taken to prepare a kalka or paste of herbs and its consistency are very important factors. Rason kalkais a very common form of kalka Kalpana which is taught at under graduate level. Garlic when crushed or subjected to paste and kept for a while changes its phyto chemical consistency which effects its

pharmacological property. Di allyl di sulphide an important phytochemical from garlic gets oxidized when comes in contact with atmospheric oxygen which hampers its cardio protective activity. In such case, time for preparing the paste must be identified and standardized which will not lose its potency. Panchavidha Kashaya Kalpana are do be used in fresh form. Many a times decoctions, juices and pastes are stored and packed with lot many preservatives which is not accepted at least in these basic five dosage forms.

Many analytical tests which seem to be simple if interpreted properly can reveal many important factors from a given sample of Ayurved dosage form. Considering dosage form in Ayurved and standardization tests to be applied on that dosage form it's very important to know the basic principle of the tests to get it interpreted correctly.

A simple Ash value of herbal drug powder can tell us the inorganic material present in the herbs as well can tell us about the adulterants present in the sample, the same ash value when applied to bhasma can tell us about the proper processing of the bhasma. High ash value of herbal powder can explore more about inorganic substances may be like soil contamination in the sample on the contrary bhasma should ideally have high ash value near to hundred. Low ash value of bhasmas suggests presence of some organic residues present in the bhasma which is not expected.

Moisture content or loss on drying is a simple test which suggests the hygroscopic nature of the herb or formulation which further suggests about the shelf life, packing condition and the sample prone for infection.

Refractive index of liquids like asavarishta, decoctions, juices, honey and oils can suggest many factors regarding the given sample. In pharmaceutical analysis, the refractive index (RI) is used to determine the purity of a given sample. Refractometers have applications for quality control and assurance of intermediate and finished drug products.

Refractive index can suggest adulterations in oils and fats and any change in RI can suggest about the adulterant, similarly RI can suggest brix value which can tell about the sugar content in the given sample. If the sugar content is getting low in a given sample like honey, avaleha or asava it can

suggest about change in stability or if sugar content of honey is high again suggests about some adulterations in honey. Similarly alcohol content of asavarishta, salinity of water or any sample, fructose content, reducing sugars can be identified by refractive index which can be interpreted in various manner for the purpose of standardization.

Extractive Value : This method is used to evaluate the quantity of chemical constituents of herbal drug extracted with various solvents such as water-soluble extractive, alcohol-soluble extractive and ether-soluble extractive. Extractive values can suggest the amount of phyto chemicals and secondary metabolites in a given sample. Low extractive values can suggest about the quality of raw material or short of some of the essential secondary metabolite in the plant. Extractive values should be understood depending on the solvents used. The amount of extract yield from a specific solvent can suggest the solubility of major phytochemicals in plants and further the dosage form and dose can be proposed. Curcuminoids from *Curcuma longa* are active phytochemical constituents which are sparingly soluble in water, but are soluble in oils and alcohol. Hence, development of further dosage form of curcuminoids can be advised as per the solubility of the phytochemical. If curcuminoids are to be used, Sneha Kalpana can be the better option which can deliver the phytochemical to targets tissue.

Moisture Content - It is the amount of water content present in herbal drug. It should be reduced to prevent decomposition of drug and the estimation of the actual weight of drug material. Depending on the moisture content it can be identified whether the drug is hygroscopic or not. Hygroscopic herbs such as Shatavari can catch moisture very fast and can be exposed to many fungal and mold infections. Depending on hygroscopic nature of the sample drug we can identify the packing and sealing procedures which can help to make that particular herb more stable.

Moisture content is also an important parameter for liquids like honey, ghee and oils. Honey normally have a moisture up to 18% , if moisture in honey goes high it suggest wrong packing methods or adulterations of thick and heated sugar cane juice. Similarly, processing of oils, preparation of ghee from butter can leave

behind more moisture which can turn them rancid. High moisture content in ghee suggests about half way processing of ghee.

Chromatographic and spectroscopic technologies are two main methods for establishing the fingerprint, including TLC, HPLC, GC, HPTLC, IR, UV, NIR, NMR, as well as DNA fingerprinting. Finger prints can be obtained from these technologies which are worldwide accepted. Finger prints are the graphical or chromatographic representations of a herb or a formulation which are unique to a particular herbs. Analysis and interpretation of these finger prints play a vital role in drug identification, drug authentication and standardization.

Chromatographic techniques - Chromatography is a physical technique used for the separation of mixture which separate between two phases, the one (stationary phase), the other (the mobile phase) moving in a definite direction. These are finger print techniques which are used to identify the presence of certain phytochemical depending on its colour. This technique is even used for drug identification as the chromatograms of every herb is unique. The techniques can suggest the proportion of certain phytochemicals present in the herbs. Chromatographic techniques are also used for identification of the purity of drugs as well. There are different types of chromatographic techniques like High potency liquid chromatography (HPLC), ultra high potency liquid chromatography (UHPLC) ,High potency thin layer chromatography (HPTLC), Thin Layer Chromatography (TLC), Gel Chromatography (GC), Liquid Chromatography mass spectroscopy (LCMS), Hydrophilic interaction chromatography (HILIC). Every technique have its own importance and unique interpretation.

HPLC - It is used for separation of phytochemical drugs in herbal industry. HPLC is mainly used to identify secondary metabolites. It is also used in refining of herbal medicines. This technique can be used for identification of adulterants like steroids in the herbo mineral components.

HPTLC - This method is mainly used in herbal drug industry. In HPTLC, the sample can be analyzed by passing different wavelengths of light which contributes complete profile of a plant. The HPTLC method have been developed for the herbal formulation for the identification of phyto

constituents.

LCMS - is mainly used to identify the molecular weights of phytochemicals. It is one of the unique techniques to segregate the herbal constituents and check their metabolites.

Gas Chromatography - GC is a well-established analytical technique commonly used for the characterization, quantization and identification of volatile compounds. The powerful separation efficiency and sensitive detection make GC is a useful tool for the analysis of essential oils. Herbs containing essential oil can be subjected for GC to check its presence and also to authenticate the herbs. Many herbs are sold after extracting their oils and they get degraded in quality. Herbs like *Celastrus paniculatus* (Jyotishmati), or *Nardostachys jatamansi* (Jatamansi) are sold after extracting their essential oil as well as volatile oil. GC can be useful to standardize such herbs and find adulterants. Herbs having essential oils or volatile oil as the main active constituents can be standardize by GC. Depending on the analysis of the dosage form of the herbs and the presence of volatile oils, amount of heat given to the herbs, whether the phytoconstituents are heat liable or stable can be found.

UV - Vis spectral studies - Ultra violet and visible light frequency and their spectral studies are useful for many analytical and clinical tests. Many herbs having anti oxidant activity can be identified by UV spectral studies in Vitro. In vivo endogenous anti oxidant level in blood can be detected by spectral analysis. UV Vis spectrophotometer is based on Lamberts and Bear law and give a spectrum of herbs which are unique for that particular herb. The studies can throw light on the phytochemical present and its constitution and is expressed in the terms of ϵ_{max} . These peaks can suggest the presence of various secondary metabolites so can be used for standardization purpose. Many kinetic reactions, DNA and RNA studies can be performed with UV Vis spectrophotometer which helps to study mechanism of action of the herbs. UV spectrophotometry is a very basic and most useful analytical tool which can be used for various in vitro and in vivo studies. Antioxidant activity of herbs by DPPH method, reducing sugar from avaleha, syrups, asava, honey etc can be analyzed accurately with UV Vis spectral studies.

UV Vis spectroscopy can be used to detect any changes occurring in the processing of various dosage forms. Difference in the phytoconstituents between the dosage form (Kalpana) from the same herbs can also be identified with UV studies. As per Ayurved concept each and every dosage form has its own indications and can't be advised universally. Powder coming from (*Withania somnifera*) Ashwagandha, its juice, its avaleha, its powder and Ashwagandharishta have different phyto constituents, different pharmacological impacts and different indications. These differences can be identified with UV studies.

Process standardization is also one of the important factor were UV studies come to help. While processing *Commiphora mukul* (Guggul) there are much chances that its active steroids gets oxidized. Such factors can clearly be identified with spectral studies by studying ϵ_{max} of guggulo sterones. Low level of Guggulo sterone suggests either some issue with raw material standards or processing standards.

FTIR - Fourier transform infrared spectroscopy is a wide area for the investigation of raw material to finished products. FTIR is a technique used to obtain a spectra of absorption or transmission of solid, liquid and gases. It gives a high-resolution data of a wide range of spectrum from 500 to 5000 cm^{-1} frequency. FTIR gives information of functional groups as well as information of bio molecular compound in the herb or a given material. Fourier transform infrared (FTIR) spectroscopy is a simple, rapid, cheap and green technique to identify mineral drugs that are solid materials mainly composed of inorganic ingredients. FTIR can also be applied for stability testing and the interaction of packing material with the drug. All liquids, powder, various dosage forms, various raw material to the end product can be standardized with the help of FTIR. Recently, FTIR spectroscopy has accepted widely due to its low noise, rapid speed, high repeatability, easy operation, and non-destruction of sample. The interpretation of the results in FTIR can guide us about the changes in bio molecular components of the herbs and the change in its effectivity. FTIR finger print gives information about the types of C-H, S-H, C-C, bonds and thus explores the information of secondary metabolites in the herbs.

It also gives the information about the quality

of the packing material and its leeching as well as environmental, temperature effect on the drug packed in it. FTIR gives information about the difference between the species of two herbs.

Regarding herbo mineral compounds FTIR explores molecular compositions and crystal structures of inorganic ingredients in mineral drugs and the compositional features of coexisting organic ingredients can be characterized simultaneously by FTIR spectra. Thus changes in the material after giving bhavana and putas can be identified. FTIR -ATR (Attenuated total reflectance) is a hyphenated tool which can be used for more accurate and precise results. ATR FTIR can elaborate accurately the bio molecular structure of bhasmas, the functional groups associated after processing of bhasmas, the effect of organic compounds and their effect on the inorganic material of bhasma and so on.

Iodine value - Iodine Value (IV)

The iodine value is a measure of the relative degree of unsaturation in oil components, as determined by the uptake of halogen. As the melting point and oxidative stability are related to the degree of unsaturation, IV provides an estimation of these quality factors. The greater the iodine value, the more unsaturation and the higher the susceptibility to oxidation. Iodine value (IV) is an index of the unsaturation, which is the most important analytical characteristic of oil. It has been found that there is a relative loss of the C18:2 fatty acid and a decrease in the iodine value of oil after heating due to more intensive thermo-oxidative transformations that occur as compared to heated oil containing food.

In regards of Ayurved medication like oil processing or processing of Sneha Kalpana temperature plays an important role. Change in temperature of processing can change the pharmacological effect of the dosage form. Iodine value suggest the temperature which should be applied while processing of oils which will prevent it from oxidation. Iodine value can also suggest the unsaturation and thus suggest the essential oil to be considered for processing for the inhibition of certain disease pathology. It also gives the idea of adulteration of raw oil which can hamper the effectiveness of the medicine.

Acid value of oils - The acid value is defined as the number of milligrams of Potassium hydroxide

required to neutralize the free fatty acids present in one gram of fat. It is a relative measure of rancidity as free fatty acids are normally formed during decomposition of triglycerides.

Many oil gets oxidized or rancid due to effect of environmental oxygen. These rancid oils can create lipid per oxidation in body tissue and can be hazardous if used in medicine. Acid value carries more importance in oil processing which indicates the quality and shelf life of raw and finished oil. The high acid value number indicates the deterioration of oil fats. This suggests its instability and should not be used as medicines.

Saponification Value - Saponification is the hydrolysis of fats or oils for the extraction of glycerol and the salt of the resulting fatty acid under simple conditions. Knowing the amount of free fatty acid present in oil which is essential to the industrial consumer is important, as this determines the processing loss to a large degree. Saponification is the process of making soap from alkali and fat (or oil). Vegetable oils and animal fats are fatty esters in the form of triglycerides. The alkali breaks the ester bond and releases the fatty acid salt and glycerol. If necessary, soaps may be precipitated by salting out with saturated sodium chloride. The saponification value is defined as "the number of milligrams of KOH needed to neutralize the fatty acids obtained by complete hydrolysis of 1 gram of an oil sample." The distribution of unsaturated and saturated fatty acid determines the hardness, aroma, cleansing, lather, and moisturizing abilities of soaps. Saponification value is very important in herbal or green cosmetics which determines the use of base oils used for body oils, soaps, serums and creams.

X Ray florescence (XRF) - In herbal samples of medicinal importance, the correlation between trace elements and their medicinal properties is well established. Each and every disease is related to the trace elements and is thought to be responsible for forming active constituents whose deficiency or excess can cause several disorders. Each herb has a typical pattern of absorption and transport of trace elements which forms the basis for herb characterization by the elemental pattern.

X-Ray Fluorescence (XRF) analysis technique is a fast technique for the identification and determination of elements. XRF is a powerful technique for nutrient plant analysis to estimate

trace elemental concentrations. XRF has been successfully applied in studies on the element composition analysis of plants, soil contamination, and agriculture. It is a widely used technique for the analysis of heavy metals in food, medicines and soil.

In Ayurved medicines there is wide application of elemental analysis where heavy metal analysis is common. Recently, herbal extracts are extensively used and some of the processing of herbal extracts are with vacuum distillation methods. With such extraction methods the elemental content is lost. XRF analysis can come to help for such analysis to find the difference between the processing's of herbal extracts depending on their elemental content. Herbs when sold as nutritional supplements, their trace elements are to be identified. Trace elemental content can help us to explore the effectiveness of the herbs, the change in the end product after processing of inorganic Ayurved medicines.

XRF of Kajjali, Parpati, Sindhur and Pottali can explore information about the free Sulphur. Simple XRF scanning of kajjali at different time intervals can suggest the Sulphur to mercury binding and time taken to get Sulphur disassociate from mercury. This way, we can identify shelf life of formulations. The formation of metallic oxides and free metal identification can also be identified with XRF studies. Such parameters can be of help in identifying complex organo inorganic components along with XRD and ATR FTIR studies in bhasma. XRF studies can be subjected to honey, avaleha, juices and decoctions of herbs to identify their elemental content.

X-ray diffraction (XRD) is commonly used for phase identification of bulk and thin-film samples, determining crystallite size, measuring loose powder samples, measuring residual stress in metals and ceramics, and more. XRD is a powerful and rapid technique for identifying unknown minerals, providing definitive mineral determination. The two theta positions correspond to a certain spacing between the crystals or atoms in the samples, determined by the angle of diffraction from the incident x-ray beam sent into the sample. The intensity of the peaks is related to the amount of molecules in that phase or with that spacing.

In Ayurved bhasma analysis XRD can help to

interpret about the ores and their sources of the raw material used. Krushna abhrak, suwarnamakshik and its types, mandur, loha and its types can be identified by XRD technology. Along with the identification of compounds in samples these raw materials can be standardized. As it is evident that bhasmas are herbo mineral complexes where it becomes difficult to identify the mineral and inorganic complexes of bhasmas. XRD along with particle size determination can characterize bhasmas and their mineral content. Various peaks of these metallic compounds can be found and identified which can work as a fingerprint for that particular bhasma.

In Ayurved bhasma preparations, number of methods are elaborated for preparing bhasma depending on the use and indications. Tamrabhasma is used in shwas, udar, liver and spleen disorders, skin disorders where methods of preparations are different. XRD technology can help us identify the difference between the inorganic content and their tissue targets and help for exploring the mechanism of action of these bhasmas. While analyzing bhasmas more focus is given to scanning electron microscopy and X-ray diffraction studies. The reports of these analytical tests should be interpreted in the light of process standardization and optimum particle size and shape achievement. Many a time agglomerates are formed in bhasma preparation which can inhibit the uptake as the bhasmas because of the non-free flowing nature due to agglomerates. Instead of such interpretation, much emphasis is given recently on identification of nano particles, which actually is not expected in Ayurved. Nano particles may be getting generated simultaneously in bhasmika but creating nano particles is not the aim of bhasma preparations.

Here lies the importance of understanding of analytical tests and its relation to its pharmacological impacts. While performing standardization and analytical tests it is expected that these analytical tests should throw some light on the mechanism of action of drug subjected to standardization at a cell level. If we consider finished product standardization regarding any bhasma and if we are applying SEM and XRD tests to decide its particle size and finding nano particles we may find some nano particles in the sample. Considering the presence of nano particles in the

bhasma sample how we relate the presence of nano particle to its pharmacological effect is a big question. There are many criteria of blood brain barrier or a cancer cell to get a entry of a nano particle into the cell. Some of the criteria are 1) Charge of nano particle 2) Solubility of nano particle 3) Bio compatibility 4) Non toxicity

Nanotechnology-based approaches are intensively studied at the moment, not only including nanoparticles but liposomes, dendrimers, micelles, and carbon nanotubes as nanocarriers to overcome the blood-brain barrier and deliver the appropriate amount of drug to the specific brain site. These studies are not even at a rudimentary stage regarding Ayurved drug and if we are targeting only nano particle, it will be single receptor targeted therapy and Ayurved medicine will lose its holistic approach.

Particle size analysis - Particle size is one of the important parameters in analysis of herbo mineral compound. Particle size and particle shape of the substance decides its rate of absorption and its acceptance by the receptor be the cell. Particle size analysis is useful in standardization of powders of herbs and bhasma. In addition, particle size analysis can be useful to identify change in particle size after bhavana and puta procedures. Ideally bhavana should reduce the particle size of the bhavitdravya enhancing its bio availability. This increase in bioavailability can enhance and potentiate the activity of medicine. Particle size analysis can be used as a tool to identify the number of bhavanas given to particular formulation. Such methods of analysis in the field of Ayurved standardization can be developed.

Particle size distribution in sample suggests the free flowing of the powders in cosmetics, zeta potential gives the idea about the stability, Particle size of pollens in honey, number of droplets in emulsion in creams and lotions, size of the droplets in lotions, suspended particles in decoction can be identified by particle size analysis.

Atomic Absorption Spectroscopy (AAS), Atomic Force Microscopy (AFM), X-Ray Diffraction (XRD), X-Ray Fluorescence (XRF), X-Ray photo electron microscopy, Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), Energy Dispersive X-Ray Analysis (EDAX), Infrared spectroscopy (IR), Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP-OES), FT-IR and Thermal Gravimetric Analysis (TGA) are some of the techniques which can be used for standardization and analysis of herbs and herbo mineral Ayurved medicines. It is very important to know the principles of these machines and then should be subjected for Ayurved drug analysis. Atomic absorption spectroscopy is used to identify the trace impurities in modern medicine drugs. In fact, when it comes to Ayurved medicines the impurities for modern drugs are Ayurved medicines therapeutic agents. Many times, lead, mercury, arsenic, or any other metallic compound can be an impurity for modern drug but in Ayurved medicines these metals are intentionally added to elicit a pharmacological response. In such condition whether such machines can be useful or not becomes a question.



प्रा. डॉ. संगिता संतोष साळवी 'टिळक'च्या उपप्राचार्यपदी

अभिनंदन!

टिळक आयुर्वेद महाविद्यालयाच्या उपप्राचार्य पदावर राष्ट्रीय शिक्षण मंडळाच्या नियामक मंडळाने डॉ. साळवी ह्यांची नियुक्ती केली आहे. दि. १ ऑगस्ट २०२३ रोजी डॉ. साळवी ह्यांनी आपल्या पदाची सूत्रे स्विकारली. शालाक्यतंत्र विभागात प्राध्यापक व विभाग प्रमुख पदावर कार्यरत असलेल्या डॉ. साळवी अध्यापना बरोबरच कर्ण-नासा-मुख (E.N.T.) संबंधित शस्त्रकर्माला निष्णात आहेत.

पदव्युत्तर एम.एस. (शालाक्य) तसेच पीएच.डी (शालाक्य) अभ्यासकमांसाठी विद्यापीठ मान्य मार्गदर्शक आहेत. विद्यार्थीप्रिय आणि रुग्णप्रिय असलेल्या डॉ. साळवी ह्यांच्या नियुक्तीचे सर्वत्र स्वागत होत आहे.

राष्ट्रीय शिक्षण मंडळ, टिळक आयुर्वेद महाविद्यालय अध्यापक वर्ग, आयुर्विद्या मासिक समिती ह्यांच्या वतीने डॉ. संगिता साळवी ह्यांचे हार्दिक अभिनंदन व हार्दिक शुभेच्छा!





Recent Advances In Quality Control Of Ayurvedic Pharmaceuticals

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Ayurvedic formulations are widely used for the prevention, therapy, treatment and management of diseases for better health. However, quality control and regulation of Ayurvedic formulations are still a big challenge. Ayurvedic drugs have traditionally been prepared as extracts of single or poly herbs, and are termed as 'crude extracts'.

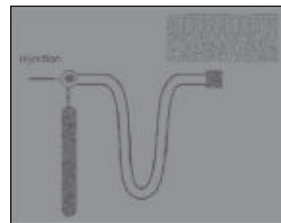
Although the chemical composition of these 'crude extracts' is not completely known, these traditional formulations contain a large number of phytochemicals with different medicinal properties, and have complex therapeutic properties. Herbal products are a time honoured medicine used since the ancient era for treatment of various ailments in human beings. The therapeutic and phytochemicals importance of herbal medicine has been established for advancement and promotion of human health but its wide-spread application is limited due to the low bio availability of phytochemicals. The nature of molecule plays a crucial role in enhancing their rate and extent of absorption administered through any route.

Plants produce a wide diversity of secondary metabolites (SM) which serve them as defense compounds against herbivores, and other plants and microbes, but also as signal compounds. In general SM exhibit a wide array of biological and pharmacological properties. Because of this some plants or products isolated from them have been and are still used to treat infection, health disorders or diseases. This review provides evidence that many SM have a broad spectrum of bio activities. They often interact with the main targets in cells such as proteins, bio membranes or nucleic acids. Whereas some SM appear to have been optimized on a few molecular targets such as alkaloids on receptors of neurotransmitters.

Chromatography in Greek means to 'write with colors'. It is a versatile separation technique developed in 1903 by Mikhail Tswett, a Russian botanist. He separated colorful plant pigments

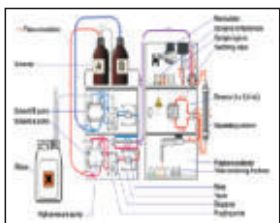
using a column of calcium carbonate. Ever since its discovery, chromatography has evolved as a powerful tool in the lab for the separation and identification of different compounds in a mixture. Secondary metabolites from plants provide lead molecules for drug development. Metabolomics is a modern omic-technique for comprehensive analysis of phytochemicals. Advances in mass spectrometry (MS) based platforms like GC-MS and LC-MS, helped in separation and identification of several metabolites. Such analysis can be a valuable tool for identifying potential biomolecules from medicinal plants.

1) Gas Liquid Chromatography Analysis - Gas chromatography is a term used to describe the group of analytical separation techniques used to analyze volatile substances in the gas phase. In gas chromatography the components of a sample are dissolved in a solvent and vaporized in order to separate the analytes by distributing the sample between two phases: a stationary phase and a mobile phase. The mobile phase is a chemically inert gas that serves to carry the molecules of the analyte through the heated column. Gas chromatography is one of the sole forms of chromatography that does not utilize the mobile phase for interacting with the analyte. The stationary phase is either a solid adsorbent, termed gas-solid chromatography (GSC), or a liquid on an inert support, termed gas-liquid chromatography (GLC).



2) HPCL (High Performance Liquid Chromatography) Analysis - HPCL can be used to separate the constituents of a compound and it is possible to know how much of each compound is found within the mixture and helps to identify what each compound is. HPCL is the technique of choice when analyzing materials for a wide range of organic

compounds. HPCL works following the basic principle of thin layer chromatography or column chromatography, where it has a stationary phase (solid like silica gel) and a mobile phase (liquid or gas). The mobile phase flows through the stationary phase and carries the components of the mixture with it. Different components travel at different rates. Thus the components are separated and found in different regions in chromatography to separate, identify and quantify.

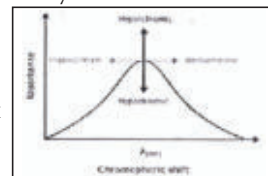


3) TLC/ HPTLC Analysis - Thin layer chromatography or TLC is a fundamental chemical method for separating non-volatile components in a mixture. This experiment is done with glass, plastic, or paper sheets. A thin coating of cellulose or silica gel is applied on this sheet (an absorbent material). The stationary phase of TLC refers to this thin layer. The TLC plate is the name for the sheet. On the TLC plate, a baseline and a topline are drawn with a pencil prior to the experiment. A capillary tube is then used to spot the sample along this line. The TLC plate is then put vertically in the mobile phase. A solvent is put in a container as the mobile phase. The TLC plate due to capillary action over time. If the sample dissolves in the mobile phase, it will rise with it. This TLC technique is based on the "like dissolves like" concept. This means that polar chemicals dissolve in polar solvents and nonpolar compounds in nonpolar solvents. The stationary phase is commonly a polar substance such as silica gel or cellulose. A nonpolar solvent, such as hexane, is utilized as the mobile phase.

The improved version of thin layer chromatography is HPTLC, or high-performance thin layer chromatography (TLC). HPTLC has a high level of resolution and precision. The majority of this technique's processes can be automated. The fundamental method of thin layer chromatography may be improved by automating the numerous processes, increasing the resolution gained, and allowing more precise quantitative measurements. The plates used in HPTLC have very minute silica gel particles and a high packing density of the gel on the plate. The plate's surface is smooth and provides

effective separation. The procedure is quicker than the TLC method. This approach also has a high sensitivity. HPTLC allows many samples to be segregated in the same plate without the need for sample preparation.

4) Uv-Visible spectrophotometer estimation based on colour measurement - Spectroscopy is the branch of chemistry concerned with the investigative measurements of the spectrum. UV-VIS (ultraviolet-visible) spectroscopy or spectrophotometry is the study of the interaction of light with matter at electronic levels. It ranges from the vacuum level ultraviolet region i.e. 180 nm to the visible region i.e.



780 nm. UV spectrum extends from 180 nm to 400 nm whereas the visible region ranges from 400 nm to 780 nm.

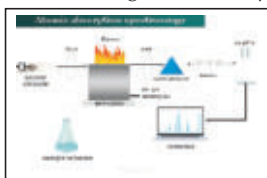
5) AAS and ICP MS analysis for heavy metals - When measuring a few elements at concentrations above 100 ppb in low numbers of samples, either flame atomic absorption spectroscopy (referred to as FAAS, flamed AAS, or just AA) or microwave plasma atomic emission spectroscopy (MP-AES) are ideal. The ICP-OES principle uses the fact that atoms and ions can absorb energy to move electrons from the ground state to an excited state. In ICP-OES, the source of that energy is heat from argon plasma that operates at 10,000 K. ICP-OES is characterized with a calibration curve with a large dynamic range of four to even six orders of magnitude. Thus the analytical range extends from trace to major constituents.

AAS is an optical atomic spectrometric technique based on the measurement of the specific absorption originating from free nonionized atoms in the gas phase. To transfer the analyte to free atoms, different types of atomizers are in use: the flame (FAAS) and the graphite furnace (GFAAS) types being the most often used.

The oldest and most commonly used atomizers in AAS are flames, principally the air-acetylene flame with a temperature of about 2300 °C and the nitrous oxide system (N₂O)-acetylene flame with a temperature of about 2700 °C.

In conclusion, must note that the both FAAS and GFAAS are low temperature excitation sources

with calibration curve, which shows good linearity in the low concentration area, but ICP OES is a high temperature excitation source and the large dynamics range of four to even six



orders of magnitude for the calibration curve. Hence, ICP-OES permits determination of elements in concentration range from trace to matrix elements simultaneously.

6) Anatomical and Molecular Biological identification of Raw Material - Plant anatomy is the study of the shape, structure, and size of plants. As a part of botany (the study of plants), plant anatomy focuses on the structural or body parts and systems that make up a plant. A typical plant body consists of three major vegetative organs: the root, the stem and the leaf, as well as a set of reproductive parts that includes flowers, fruits, and seeds.

Massive loss of valuable plant species in the past centuries and its adverse impact on environmental and socioeconomic values has triggered the conservation of plant resources. Appropriate identification and characterization of plant materials is essential for the successful conservation of plant resources and to ensure their

sustainable use. Molecular tools developed in the past few years provide easy, less laborious means for assigning known and unknown plant taxa. These techniques answer many new evolutionary and taxonomic questions, which were not previously possible with only phenotypic methods. Molecular techniques such as DNA barcoding, random amplified polymorphic DNA (RAPD), amplified fragment length polymorphism (AFLP), microsatellites and single nucleotide polymorphisms (SNP) have recently been used for plant diversity studies.

Ayurvedic medicine system is advantageous to humanity, but there is still a lack of appropriate standardization techniques for determining its consistency, quantity and effectiveness. In order to standardize and measure the main biomarker molecules through drug and formulations from poly herbal, chromatographic methods are precise, as per WHO guidelines. The oldest prevalent system for dealing with disease is utilize of therapeutic plants in treating disease is a boon to humanity.

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Ayurveda First

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Pharmaceutico - Analytical Study Of Suranadi Khand (Granules) - A Modified Form Of Suranadi Avaleha

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Background : Ayurveda is a science of life. It is mainly based on the Trisutra, Hetu, Linga and Aushadhi. Among these Aushadhi plays a major role in the treatment. The standardization of herbal formulations and nutraceuticals, a thoughtful knowledge of the important herbs found in India Suranadi Khand (Granules) is a Avaleha preparation and is explained in Sharangadhar samhita which is used in the Arsha, Mandaagni, Pleehagulma, Shwas, Kasa, Ashtila. In moderna era more importance is given for the feasibility, palatability, minimum dose, easy administration, increased bio availability and shelf life of a formulation. Hence the present study highlights the Preparation and Pharmaceutical Standardization of Suranadi Khand (Granules)- A Modified Dosage form as Suranadi Avaleha.

Introduction : Bhaishajya is the one among Chikitsa Chatuspada, without which the suppression of disease is not possible. Bhaishajya is the weapon offered by Ayurved to conquer the overspreading deadly diseases. Acharya Charak has mentioned Panchavidha kashay kalpana. i.e swarasa, kalka, kwath, hima, fant. In the same sequence Acharya have mentioned different formulations with the same herbs according to their efficacy, dose and palatability etc. But there are some demerits of these formulations too e.g. large amount of dose, less shelf life etc.

In today's era more importance is given for the feasibility, palatability, minimum dose, easy administration, increased bioavailability and shelf life of a formulation. Avaleha or Leha is a semisolid preparation of drugs, prepared with addition of jaggery, sugar, and boiled with prescribed drug juice or decoction. The definition of avaleha is "kwathadina punh: pakat kathyate sa rasakriya so avlehach" is mentioned in the sharangdhara samhita madhyam khanda. Suranadi Avaleha kalpana is explained in text of Sharangdhar Samhita, Ashtang Hridayam. Which is indicated for Arsha, Mandaagni, Pleehagulma, Shwas, Kasa, Ashtila. Suranadi Avaleha will be prepared by using the

ingredients Suran, Dhanyaka, Pippali, Twak, Ela, Patra, Marica, Sunthi, Khanda, Go-ghrita, Madhu.

There is number of classical formulations available for protective as well curative purpose of disease such as Arsha, Mandagni. As per the need of time we have to modified the Suranadi Avleha to suitable forms, Converting it to granules form will ensure its palpability, ease of handling and comfortable for use. No studies have been carried out on this drug yet. Hence the present study planned to evaluate 'Preparation and Pharmaceutical Standardization of Suranadi Khand (Granules)- A Modified Dosage form as Suranadi Avaleha'. (See Table 1, 2)

Methods:- 1) Avaleha Preparation -

- Fresh Surana and other ingredients was collected and cleaned (To remove foreign matter)
- Kept in clean steel vessel
- Surana was peeled, Cut into small piece
- Distilled water in quantity double to Surana and was heated on Mandagni
- When Surana pieces becomes soft, were mashed to paste
- Paste was fired in ghee on Mandagni till it turned to brown
- Sugar four times quantity to that of paste were added in the water and boiled till paka attains Aapsumajjati, Tantumatwa
- Fried paste were added to the paka
- It will be mixed vigorously and stirred continuously till the Avaleha attends Siddha Lakshan.
- When it becomes Swanga shita, honey will be added in required quantity to prepared suran avaleha

2) Granules Preparation - • Prepared Avaleha was taken

- When it becomes Swangasita, add prakshep dravya and honey was added in required quantity and stirred again to prepared Suran Khanda (Granule)

Pharmaceutical Study Of Suranadi Khand

Materials And Methods

Materials

Table no.1: Containts Of Suranadi Awaleha And Their Properties

No	Dravya	Rasa	Virya	Vipak	Guna
1	Suran(6)	Katu, Kashaya	Ushna	Katu	Laghu, Ruksha Vishada
2	Go-ghrita	Madhura	Sheet	Madhura	Singdha, Mrudu
3	Sharkara	Madhura	Sheet	Madhura	Guru, Snigdha
4	Pippali(7)	Katu	Ushna	Katu	Laghu, Snigdha
5	Sunthi(8)	Katu	Ushna	Madhura	Laghu, Snigdha
6	Jiraka(9)	Katu	Ushna	Katu	Laghu, Tikshna
7	Dhanyaka(10)	Kashaya, Katu Tikta	Ushna	Madhura	Laghu, Snigdha
8	Tejapatra(11)	Katu	Ushna	Katu	Tiksna, Laghu
9	Ela(12)	Katu, Madhura	Sheet	Katu	Laghu, Ruksha
10	Maricha(13)	Katu	Ushna	Katu	Laghu, Tikshna
11	Twak(14)	Katu, Tikta	Ushna	Katu	Laghu, Ruksha, Tiksna
12	Madhu	Madhura, Kashaya	Sita,	Katu	Laghu, Yogavahi

Table no.2: shows dravyas scientific name, part used and quantity

	Dravya	Scientific Name	Part used	quantity
1.	Suran	Amorphophallus campanulatus(Roxb)	Fruit	100 pal
2.	Goghrut	Butyrumdepartum		8 pala
3.	Sharkara	Sugar		400pala
4.	Pippali	Piper longum Linn	Seed	2 pala
5.	Sunthi	Zingiber officinale	Rhizome	2 pala
6.	Jirak	Cuminum cyminum Linn	Fruit	2 pal
7.	Dhanyaka	Coriander sativa	Fruit	Half pal
8.	Tejpatra	Cinnamommtama	Leaf	Half pal
9.	Ela	Elettaria cardamoummaton	Seed	Half pal
10.	Maricha	Piper nigrum Linn	Fruit	Half pal
11.	Twak	Cinnamomum zeylanicumlume	Bark	Half pal
12.	Madhu	Honey		Qua. Req

(granules) : Suranadi Khand (Granules) is a Avaleha preparation explained in Sharangadhar samhita. This was prepared by using drugs like Surana, Ghrita, Sharkara, Pippali, Sunti Dhanyak, Twak, Jeerak and Madhu. The drugs were taken in appropriate quantity. Mandagni was applied to perform Avaleha preparation. Kalpa Siddhi Pareeksha were observed clearly. The temperature recorded at this stage was 65-70oc. then after cooling honey was added to the mixture and mixed uniformly. The tempaure recorded at this stage was 35oc. after uniform mixing the whole mixture was converted in to homogeneous blende. This blende was taken for Granule preparation with help of mesh no 40#. Suranadi khand granules were prepared in 3 sample and were analyzed separately.

Results :- Physico chemical parameters of the individual drug and Suranad khand granules were suggestive of the quality and increased shelf life.

Physico-chemical Study Of 3 Samples Of Suranadi Khand Granules :

• **Organoleptic Characteristics :** Organoleptic properties are mentioned. The developed formulation was Light yellow colored, characteristic odor, semisolid in consistency in the samples of SK granules 1 and 2. But In the sample SK granules 3 had light yellowish in color. The remaining observations were similar to sample 1 and 2.

• **Loss On Drying :** Moisture content of sample Suranadi Khand Granules 1,2,3 was found 1.39%, 1.39% and 1.37% respectively. It indicates moisture content. Low moisture content is desirable for higher stability of the formulation.

• **Ash Value :** Ash value of sample Suranadi Khand Granules 1,2,3 was found 2.97 % , 2.37% and 2.35% respectively. This value was found to be reasonably low, which indicates low contamination. It is criteria for indentifying the purity of the drugs. Total ash is inclusive of extraneous matter such as sand, soil etc adhering to the herbal drug.

● **Water Soluble Ash** : Water soluble Ash of sample Suranadi Khand Granules 1,2,3 was found 0.59 % , 0.57 % , 0.55% respectively. This shows normal quality of the drugs of the Suranadi Khand (Granules 1,2,3) and presence of more active principle in the sample.

● **Acid Insoluble Ash** : Acid insoluble ash of sample Suranadi Khand Granules 1,2,3 was found 0.53 % , 0.63 % 0.53 % respectively. This shows indicative of very less amount of non-physiological components like silica, less adherent dirt and sand particles of the Suranadi Khand Granules.

● **The water soluble extractive of sample Suranadi Khand** : Granules 1,2,3 were found to be 67.15%, 67.13% , 67.09% respectively and alcohol soluble extractive of sample Suranadi Khand Granules 1,2,3 were found to be 53.37%, 53.39%, 53.49% respectively, indicating considerable amount of polar compounds in the sample.

● **pH Value** : pH of Suranna khand Granules (1,2,3) was 6, which is a weak basic. This indicates granules is gastric friendly, does not cause harm to the gastric mucosa and maintains integrity of gastric mucosa. This has shown acidic nature of formulation, due to the reason of use of hanoey and other ingredients in Paak process.

● **Total sugar** of Suranna khand Granules (1,2,3)

It was found to be in the range of 41.68 % , 41.68 % , 41.66 % respectively, suggested that considerable amount of Sugar in the sample, as well exhibits solubility of the manufactured product and nutritional value in terms of carbohydrate.

Reducing Sugar of Suranna khand Granules (1,2,3) was present respectively.

● **Total Solid Content Of Suranna Khand** : Granules (1,2,3) was found 0.26 gm, which in turn shows low moisture content, important factor for longer stability period.

● **The Total Fat Of Suranna Khand** : Granules (1,2,3) was found to be 0.21 gm, 0.21 gm, 0.20 gm respectively. As SK granules is also used for giving energy, it is expected to be high in Calorific Value.

● **Total Acidity** was found to be 0.12 % , 0.12% , 0.13 % shows within the limit.

● **TLC** reveals the presence of presence of Phyto constituents in the individual ingredients.

● **HPTLC** study was performed to get finer results to get finer details.

Analysis of the data obtained from the analytical study suggests that the parameters will be useful for standardization of Suranadi khand

Granules.

Discussion - Preparation and Pharmaceutical Standardization of Suranadi Khand (Granules)- A modified dosage form of Suranadi Avaleha was taken in this study. Samples selected for the study shows that analytical standards were in accordance with API standards.

Physico chemical parameters of the individual drugs and Suranadi Khand (Granules) were suggestive of the quality and increased shelf life. Parameters results of Powered drugs were as per the guidelines of Ayurvedic pharmacopoeia of India.

Conclusion - This study can concluded that, Suranadi khand Granules was being prepared by following SOP and was analyzed. The analytical parameters were within the parameters mentioned in the API and were suggestive of the genuine of the raw material used and the quality of the end product obtained. The data obtained from Analytical parameters of Suranadi Khand (Granules) can be considered as reference for its standardization. The Physico chemical parameters such as loss on drying, Total Ash value, water soluble ash, acid insoluble ash, pH, Alcoho soluble extractives, Water soluble extractives, Acid insoluble ash, Water soluble a sh, TLC, Total Acidity, Total Solid Content, Fat Content, Reducing Sugar, Total Sugar, HPTLC and Organoleptic characteristics can be efficiently used for standardization of Suranadi Khand Granules.

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लौह कल्प व पाण्डु चिकित्सा

वैद्य कविता तुरंबेकार - हांडे, (M.D. Rasashastra.)

सहयोगी प्राध्यापक, रसशास्त्र भैठाज्यकल्पना, रा. आ. पोदार आयुर्वेद महाविद्यालय वरळी, मुंबई.

प्रस्तावना - आयुर्वेद संहिताग्रंथांमध्ये पाण्डु व कामला या दोनही व्याधीचे वर्णन एकाच अध्यायात केलेले आहे. त्वेचच्या ठिकाणी निर्माण होणार वैवर्ण्य पाण्डुमधील पांडुता, कामलेमधील पीतता यांची व्यक्ती वैवर्ण्यावरूनच होते म्हणूनच आयुर्वेदाचार्यांनी या दोन्ही व्याधींचे वर्णन संभवतः एकत्र केलेले असावे. दोन्ही व्याधी पित्तप्रधान व रस रक्त घातू दुष्टिमुळेच निर्माण होणारे आहेत.

‘सर्वेषु चैतस्विह पाण्डुभावो यतो ऽधिकोऽतः खलु पाण्डु रोगः’ (सु. उ. ४४/४) पाण्डु या व्याधीमधील वैवर्ण्य सांगताना ‘केतकीघुर्लीसन्निभः।’ (अमरकोष) म्हणजेच केवड्याच्या कणसाप्रमाणे फिक्का पांढरट व पिवळी छटा असणारे असे केलेले आहे. पाण्डु या व्याधीमधील पाण्डुभाव निर्माण होणे म्हणजेच रक्ताची लालीमा कमी होते याची प्रचीती सुरुवातीस डोळ्यांचे परीक्षण केले असता लक्षात येते. त्याचप्रमाणे नख, त्वक्, मलमूत्रादि यामध्ये पांढरट, पिवळी छटा असणारे वैवर्ण्य, रुक्षता दिसून येते. याच पाण्डुरोगाची चिकित्सा न केल्यास त्यामुळे कामला, शोथ, हृददीर्बल्य, इन्द्रियशिथिलता (इन्द्रियांकडून विषयाचे व्यवस्थित ज्ञान ग्रहण न होणे), धातुनिस्सारता आदि उपद्रव निर्माण होतात. व्यवहारामध्ये पाण्डुचा संबंध फक्त Hemoglobin count कमी असणे किंवा Anaemia याचाशीच लावला जातो. काही दिवस रक्तवाढीच्या गोळ्या घेऊन रक्तकोशिकांमध्ये उपलब्ध असलेले. लोहयुक्त प्रोटीन म्हणजेच Hemoglobin वाढला की पाण्डुची चिकित्सा झाली. असे समजले जाते परंतु पाण्डु हा व्याधी याहीपेक्षा अधिक व्यापक स्वरूपात आयुर्वेदात वर्णिलेला आहे. पाण्डु या व्याधीची चिकित्सा केली नाही तर धातुंच्या पोषणाचाच अभाव होत असल्याने धातुंच्या सारभागातून निर्माण होणारे ओज यांमध्ये विकृती निर्माण होते, ओजक्षय होतो म्हणूनच दीर्घायुष्याचा आधारस्तंभ असणारे ओज क्षीण होत असेल तर नक्कीच पाण्डुची चिकित्सा करणे व धातुबल, धातुसारता वाढवून, रोगप्रतिकारक शक्ती वाढविणे आवश्यकच आहे. संहिता ग्रंथांमध्ये पाण्डुची चिकित्सा करताना पाण्डुच्या ५ प्रकारानुरूप स्नेहन, वमन, विरेचनाद्वारे कोष्ठ शुद्धि केल्यानंतर पथ्यकर आहार - विहार व शमन औषधी देणे हा उपाय सांगितला आहे. पाण्डु चिकित्सा करताना रसौषधींचा उपयोग करणे हे पाण्डुचिकित्सेसाठी एक वरदानच आहे. रसौषधींच्या साहाय्याने धात्वग्नि सुधारून, धातुमधील पोषणक्रम सुधारतो. शरीरामध्ये निर्माण झालेले वैवर्ण्य-पाण्डुरता दूर करून प्राकृत वर्ण प्राप्त करण्यासाठी लौहधातुभस्मांपासून निर्मित लोहकल्पांचा उपयोग करून सारवान धातु निर्मित होतात. रस रक्तादि धातुंमधील निस्सारता, शिथिलता, इन्द्रियशैथिल्य, दृढदौर्बल्य आदि दूर करून शरीर इन्द्रिय यांना दृढ करण्यासाठी केवळ द्रव्यौषधी पेशा रसौषधीच अधिक गुणवान ठरतात. कारण, रसौषधींचे माहात्म्य वर्णन करताना रसग्रंथामध्ये पुढील प्रमाणे वर्णन आलेलेच आहे.

‘‘अल्पमात्रोपयोगित्वात् अरुचेरप्रसङ्गात्।

क्षिप्रमारोग्यदायित्वात् औषधेभ्योऽधिकोरसः।।’’

विविध लोह कल्प म्हणजेच नवायास लोह, ताप्यादि लोह, पुनर्णवा मण्डूर, शतावरी मण्डूर, विंडगादि लोह, लोहासव आदि लोहकाल्पांचे गुणधर्म त्यांची कार्मुकता व अवस्थेनुरूप कोणते औषण कोणत्या अवस्थेमध्ये वापरता येईल याचे सविस्तर विवेचन करण्याचा प्रयत्न केलेला आहे.

ग्रंथोक्त विवेचन - पाण्डु या व्याधीच्या कारणांचा विचार केला असता ग्रंथामध्ये पुढीलप्रमाणे वर्णन केलेले आहे.

‘‘व्यायामल्लवणानि मदयं मृदं दिवसास्वप्नमतीव तीक्ष्णम्।

निषेवमाणस्य प्रदूष्य रक्त दोषास्त्वचं पाण्डुरतां नयन्ति।।’’ (सु. उ. ४४/३)

चरकसंहितेमध्ये पुढीलप्रमाणे पाण्डुच्या कारणांचा संदर्भ दिलेला आहे.

‘‘क्षाराम्ललवणात्युष्णविरुद्धासात्म्यभोजनात्।

निष्पावमाषपिण्याकतिलतैलनिषेवणात्।।

विदग्धेऽन्ने दिवास्वाऽप्लाद व्यायामान्मैथुनात्तथा।

प्रतिकर्मतुर्वैषम्यात्वेगा नां च विधारणात्।।

कामचिन्ताभय क्रोधशोकोपहतचेतसः।।’’ (ब. चि. १६/७-९)

अतिव्यायाम, अम्ल व लवण रसयुक्त तीक्ष्ण पदार्थ अत्यधिक सेवन, मदयपान, मृत्तिकाभक्षण या हेतु सहित जेवणानंतर विदग्ध अवस्थापाक असताना व्यायाम, मैथुन व दिवास्वाप आदि कारणांनी पित्तप्रधान दोषदुष्टि घडून येते. तसेच क्षारसेवन, विरुद्ध-असात्म्य भोजन, निष्पाव, भाष, पिण्याक, तिलकल्कसेवन व काम, चिंता, भय, क्रोध, शोक, उपहतचेतस् आदि मानसिक हेतु पाण्डु या व्याधिमध्ये वर्णन केलेले आहेत.

सम्प्राप्ति -

‘‘समुदीर्णं यदा पितं हृदये समवस्थितम्। वायुना बलिना क्षिप्तं

सम्प्राप्यं धमनी दश। प्रपन्ने केवलं देहं त्वक्मांसान्तरमाश्रितम्।।

प्रदूष्य कफवातासृक्त्वक्मांसानि करोति तत्। पाण्डुहारिद्रहरितान् वर्णन् बहुविधांस्त्वचि स पाण्डुरोगः।।’’ (ब. चि. १६/९-११)

प्रकुपित पित्त दोष → जाठराग्निदुषित → पित्तदोषाने दुष्ट आहाररस

← ← ← ← ← ↓
हृदयामध्ये स्थित होऊन (स्थानसंश्रय)

↓
व्यानवायुद्वारे प्रेरित होऊन दशधमनीमार्फत रस-रक्ताच्या माध्यमाने संपूर्ण शरीर गमन

↓
त्वक्-मांसाच्या मध्ये आश्रित (व्यक्ति) त्वक्-रक्त-मांस स्थानिक वात-कफ दुष्टि

↓
त्वक्गत रक्तवाहिन्या अधिक उत्तान असल्याने त्वक्वैवर्ण्य निर्माण, नख, नेत्र, मुखत्वक् पाण्डुरता

↓
येथे सम्प्राप्ति थांबत नाही जर पांडुची चिकित्सा केली नाही तर



सोऽल्परक्तो ऽल्पमेदस्कः



बल, वर्ण, स्नेह या प्रमुख भावांचा क्षय
साप्राप्ति घटक- दोष पित्तप्रधान त्रिदोष. दूष्य- रस, रक्त, मांस.
अधिष्ठान- सर्वशरीरगत त्वचा. स्रोतस - रसवह, रक्तवह
पाण्डु या व्याधीला पाण्डु, कामला, पानकी, कुंभाब्द, लाघरक,
आलस अशी पर्यायी नावे सुश्रुतांनी वर्णिलेली आहेत. अशा प्रकारे
मुख्यतः पित्तप्रधान दोषामुळे रसधातुचे क्षण होते व
रसधातुक्षयामुळे उत्तरोत्तर रक्तादि धातुच्या पोषणाचा अभाव निर्माण
होतो. यामुळे रक्तक्षय, मांसशैथिल्य, मेदोक्षय दिसून येतो.

पाण्डु व्याधि पूर्वरूप -

१) "त्वक्स्फोटनं धीवनगात्रसादौ मृदभक्षण प्रेक्षण कटशोथः।

विष्मूत्रणीतत्वमधाविणको भविष्यस्ततः तस्य पुरः सराणि।।" (सु.च. ४४/५)

२) "हृदयस्पंदनं, रौक्ष्यं स्वेदाभावः श्रमस्तथा।" (च.चि. १६/१२)

त्वकरौक्षत्व; वारंवार धीवन, गाविसाद (अंगशैथिल्य). माती
खाण्याची इच्छा होणे, डोळ्याखाली सूज असणे, मल-मूत्र पीतता
तसेच हृदयस्पंदनः जाणवणे, स्वेदाचा अभाव व अल्प आयोजन श्रम
आदि पाण्डुची पूर्वरूपे ग्रंथात वर्णिली आहेत.

सामान्य लक्षण - "सोऽल्परक्तोऽल्पमेदस्कः निःसार शिथिलेन्द्रियः।

वैवर्ण्यं भजते...." (च.चि. १६/६)

पाण्डु चिकित्सा -

"तत्र पाण्डवामयी स्निग्धस्तीक्ष्णैः उर्ध्वं अनुलोमिकैः।

संशोध्यो मृदुभिस्तिकैः कामली तु विरेचनैः।।

ताभ्या संयुद्धकोष्ठभ्यां पथ्यान्त्यन्मानि दाययेत्।

शालीन सयवगोधमान् पुराणान् यूषसंहितान्।।

मुदगआढकीमसूरैश्च जाड्गलैश्च रसैः हितैः। (च.चि. १६/३९, ४०, ४१)

पाण्डु या व्याधिमध्ये पूर्वी वर्णन केल्याप्रमाणे बल, वर्ण, स्नेह या
प्रमुख भावांचा क्षय झालेला असल्याने सर्वात महत्वाचा उपक्रम
म्हणजे आभ्यंतर स्नेहन होय. पित्तप्रधान दोषदुष्टि असल्याने चार
स्नेहयोनिरूपेची घृतपानक श्रेष्ठ अथवा योग्य ठरते. पंचगव्य, महातिक्त,
कल्याणक, दाडिमादि घृत आभ्यंतर स्नेहनार्थ वापरून
आवश्यकतेनुसार उर्ध्व - अध शुद्धि करून नंतर शमनौषधींचा
उपयोग पाण्डु चिकित्सेमध्ये करावा लागतो. ग्रंथामध्ये पुढीलप्रमाणे
विविध लौहकल्पांचे वर्णन केलेले आढळते.

उदा. नवायास लौह (च.चि. १६), ताप्यादि लौह / योगराज
(च.चि. १६), पुनर्नवा मण्डूर (च.चि. १६), मण्डूरवटक (च.चि.
१६), शतावरी मण्डूर (भै.र. शूलरोग), त्रिफला मण्डूर (भै.र.
आलपित्त), सप्तामृत लौह (भै.र. शूलरोग), प्रदरांतक लौह
(भै.र. स्त्रीरोग), लौह रसायन (भै.र.-स्थौल्य रोग),
आम्लपिलान्तक लौह (भै.र.-अम्लपित्त), चंदनादि लौह
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लौह (भै.र. ज्वर अधिकार), शिलाजत्वादि लौह (भै.र. राजयक्ष्मा),
विडंगादि लौह (र.सा.सं.), सप्तामृत लौह (भै.र. नेत्ररोग), समशर्कर
लौह (भै.र.-कासरोग), सर्वज्वरहर लौह (भै.र. ज्वर)

विमर्श/चर्चा- प्रत्यक्ष रुग्णाची चिकित्सा करत असताना
वापरण्यात येणाऱ्या प्रमुख लौह कल्पांची पुढीलप्रमाणे विस्तारपूर्वक
विवेचन केलेले आहे.

१) नवायास लौह - ग्रंथाधार - च. चि. १६ रोगाधिकार - पाण्डुरोग

"यूषणस्त्रिफलामुस्तविडङ्गचित्रकाः समाः।

नवायोरजसो भागास्तचूर्णं क्षौद्रसर्पिसा।।

भक्षयेत् पाण्डुहृद्रोगकुष्ठार्शः कामलापहम्।

नवायासमिदं चूर्णं कृष्णात्रेयेण भाषितम्।।" (च.चि. १६/७०-७१)

घटक द्रव्ये - त्रिफला, त्रिकटु, त्रिमद (विडंग, मुस्ता, चित्रक)
यामुळे जाठरग्न दीपन होऊन धात्वग्नि वर्धन होते. रसगत दोषपचन
होऊन सारवान रसाधातु निर्मिती होते यामुळेच पुढे रक्तपोषणक्रम
सुधारतो. म्हणून पाण्डुच्या सुरुवातीच्या अवस्थेमध्ये जेव्हा
पाण्डुमुळे उत्तरोत्तर धातुक्षय झालेला नसतो तेव्हा अशा उपद्रवरहित
पाण्डुमध्ये नवायास लौह हा प्राथमिक कल्प म्हणून वापरता येतो.

२) ताप्यादि लौह - (किंवा चरकोक्त - योगराज)

ग्रंथाधार - च.चि. १६ रोगाधिकार - पाण्डु

"त्रिफलायास्त्रयो भागात्त्रयत्रिकटुकस्य च। भागात् चित्रक मूलस्य
विडङ्गानां तथैव च। पञ्चाश्व जतुनो भागास्तथा सप्तामलश्च च।
माक्षिकस्य च शुद्धस्य लौहस्य रजसः तथा। अष्टौ भागाः सितयाश्व
तत्सर्वं सूक्ष्मचूर्णितम्। माक्षिकेणाप्लुतं स्याप्यमायसे भाजने शुभे।"

(च.चि. १६/१०-१३)

● रस - तिक्ताकषाय वीर्य - शीत दोषघ्नता - पित्तकफघ्न विपाक
- मधुर अवयव ● गामित्व - आमांशय, यकृतप्लीहा ● घटकद्रव्ये
- ताप्यादि लौह या कल्पामध्ये देखील त्रिफला, त्रिकटु चित्रक,
विडंग आदि द्रव्यांमुळे कोष्ठगत अग्निवर्धन होऊन त्यामुळे
रसधातुवाग्निवर्धन. रसगत दोषपचन होऊन रसधातु सारवान होतो
त्यामुळे रक्तधातुपोषण होते. शिवाय यामधील लौह भस्म,
मण्डूरभस्म, माक्षिक भस्म रक्तधातुवर बल्य म्हणून कार्य करतात.
रौप्यभस्म मज्जाधातुगामी आहे व शिलाजतु शुक्रधातुवर्धक
असल्याने, रसधातुपासून शुक्रधातुपर्यन्त चिरकालीने पाण्डु सम्प्राप्ति
असताना ताप्यादि लोहाचा प्रमुख उपयोग होतो.

३) पुनर्नवा मण्डूर -

ग्रंथाधार - च.चि. १६ रोगाधिकार - पाण्डु

"पुनर्नवा त्रिवृतव्योष विडङ्ग दारुचित्रकम्। कुष्ठ हरिद्रे त्रिफला दन्ती
चव्यं कलिङ्गकाः। पिप्पली पिप्पलीमूलं मुस्तं चेति पलोन्मितम्। मण्डूरं
द्विगुणं चूर्णात् गोमूत्रे ह्याढके पचेत्।।" (च.चि. १६/१३-१५)

रस - कटु. कषाय वीर्य - उष्ण विपाक - कटु दोषघ्नता -
कफवातघ्न अवयवगामित्व - यकृत, प्लीहा, ग्रहणी.

पुनर्नवा मण्डूर मध्ये देखील वरील २ कल्पांप्रमाणे त्रिफळा, त्रिकटु,
विडंग, चित्रक आदि औषधी द्रव्ये असून लोहाऐवजी मण्डूर. भस्म
आहे शिवाय दन्ती, चव्य, कुष्ठ, हरिद्रा, पुनर्नवा प्लीहामये पिप्पली
या सूत्राप्रमाणे पिप्पली, पिप्पलीमूल व उष्ण-तीक्ष्ण, भेदन असे
गुणधर्म असणारे गोमूत्र असल्याने कफप्रधान, स्त्रोतरोधप्रधान
पाण्डुमध्ये पुनर्नवा मण्डूर उपयुक्त ठरते.

४) मण्डूर वटक - ग्रंथाधार - च.चि. १६ रोगाधिकार - पाण्डु
घटक द्रव्ये- त्रिकटु, त्रिफला, त्रिमद (विडंग+मुस्ता+चित्रक),
देवदारु, चव्य, पिप्पली मूल - सर्व १ भाग घेऊन यामध्ये
सुवर्णमाक्षिक भस्म १ भाग व मण्डूर भस्म-दुपट्ट प्रमाणामध्ये आहे
व अष्टभाग गोमूत्रामध्ये पाचित करून हा कल्प तयार होतो. गुणधर्म-
अग्निमांद्यप्रधान पाण्डु तसेच गोमूत्र अधिक असल्याने कफप्रधान-
स्त्रोतरोधप्रधान पाण्डुमधील गुणकारी कल्प आहे.

५) शतावरी मण्डूर - ग्रंथाधार - भैषज्यरत्नावली, रोगाधिकारः

शूलरोग घटक द्रव्ये - मण्डूर भस्माचे, शतावरी स्वरस, गोदुध, गोदधि व गोघृतामध्ये पान केले असता शतावरी मण्डूर कल्प तयार होतो. गुणधर्म - शतावरी मण्डूर उत्तम वातपित्तशामक असा कल्प असून पित्तप्रधान पाण्डु सम्प्राप्ति असताना वा पित्तदुष्टिकारक हेतु असताना या कल्पाची उपाययोजना करता येते.

६) त्रिफला मण्डूर - ग्रंथाधार - भैषज्यरत्नावली रोगाधिकार - अम्लपित्त घटक द्रव्ये - त्रिफला चूर्ण व मण्डूर भस्म समप्रमाणात घेऊन खल करणे. गुणधर्म - त्रिफळा मुळातच कफपित्तघ्न आहे व मण्डूर भस्म शीत, पित्तशामक असून रक्तधातुवर्धक रक्तधातुबल्य असे आहे.

७) सप्तामृत लौह - ग्रंथाधार - भैषज्यरत्नावली रोगाधिकार - शूलरोग घटक द्रव्ये - त्रिफला चूर्ण, यष्टिमधु चूर्ण व लौहभस्म सर्वसमानभाग प्रमाणात घेऊन मधु व घृतासहित सेवन करावे. गुणधर्म - कषाय-तिक्त व मधुर रसप्रधान कल्प असून लौहभस्म शीत असल्याने हा कल्प देखील कफपित्तघ्न म्हणून कार्य करतो.

८) प्रदशनक लौह - ग्रंथाधार भैषज्यरत्नावली रोगाधिकार - स्त्रीरोगाधिकार घटक द्रव्ये - त्रिफळा, त्रिकटु, विडंग, चित्रक, चव्य, वचा, हिबेर, कुष्ठ कर्चुर, पाठा, देवदारु, एला, विधारा यांसह अभ्रक भस्म, लौहभस्म, ताम्रभस्म, शु. हरताल, वंगभस्म, कपर्दिक भस्म व शंखभस्म आदि एकत्रित करून कल्प तयार केला जातो. गुणधर्म - या कल्पामध्ये रसौषधीभस्म अधिक प्रमाणात असल्याने. पाण्डु उपद्रवस्वरूपात निर्माण होणारे तसेच अजीर्ण अपचनजन्य प्रदर व्याधी, गर्भाशय थिथिलता, बीजकोष शिथिलता यामध्ये उपयुक्त असा कल्प आहे.

९) रोहितक लौह - ग्रंथाधार - भैषज्यरत्नावली रोगाधिकार प्लीहायकृतरोगाधिकार. घटक द्रव्ये-त्रिफला, त्रिकटु, त्रिमद प्रत्येकी १-१ भाग व रोहितक चूर्ण, लौहभस्म ९ भाग एकत्रित करून हा कल्प तयार होतो. गुणधर्म - रोहितक चूर्ण व लौहभस्मप्रधान कल्प असल्याने यकृतविकृतीजन्य मंदाग्नि असताना शिवाय क्षुधामांदय व वारंवार ज्वरोत्पत्ति असताना यकृतविकृति नाश करून पाण्डुसाठी उपयुक्त असा कल्प आहे.

१०) अम्लपित्तांतक लौह - ग्रंथाधार - भैषज्यरत्नावली रोगाधिकार अम्लपित्त. घटकद्रव्ये - कज्जलीसहित मण्डूर भस्म, कान्तलौहभस्म, अभ्रकभस्म यास आमलकी स्वरसाची भावना निर्माण केले गुणधर्म - अम्लपित्तजन्य प्रधान व्याधी व त्यामुळे उत्पन्न पाण्डु व्याधी मध्ये उपयुक्त असा हा कल्प आहे.

११) चंदनादि लौह - ग्रंथाधार - भैषज्यरत्नावली रोगाधिकार - ज्वर घटक द्रव्ये - रक्तचंदन + पाठा + उशीर, पिप्पली, हरितकी, शुण्ठी कमलपुष्प, आमलकी, त्रिमद व लौहभस्म एकत्रित करून निर्माण होणारा असा हा कल्प आहे. गुणधर्म - चंदन व लौहभस्म दोनही शीत असून पित्तप्रधान जन्य ज्वर व त्यायोगे निर्मित : पाण्डु रसरक्तादि धातुपर्यंत स्तिमित असताना वापरावयाचा हा कल्प होय.

१२) घात्री लौह - ग्रंथाधार - भैषज्यरत्नावली रोगाधिकार - शूलरोग घटक द्रव्ये - आमलकीचूर्ण, व लौहभस्म यास गुडुची स्वरसायची भावना देऊन घात्री लौह कल्प निर्माण करण्यात येतो. गुणधर्म - आमलकी व यष्टिमधु उत्तम पित्तशामक द्रव्ये असून पित्ताचे उष्ण-तीक्ष्ण गुणधर्म वाढलेले असताना निर्माण होणारा

अम्लपित्तजन्य परिणामशूल यामध्ये व त्यायोगे निर्मित पाण्डु व्याधीमध्ये उपयुक्त असा कल्प आहे.

१३) पुटपक्व विषमज्वरांतक लौह - ग्रंथाधार - भैषज्यरत्नावली रोगाधिकार - ज्वर. घटक द्रव्ये - कज्जलीसहित या कल्पामध्ये स्वर्णभस्म, लौहभस्म, ताम्रभस्म, अभ्रकभस्म, वंगभस्म, प्रवाळभस्म, मौस्तिक-शंख-शुक्तिभस्म व गैरिक आदि. गुणधर्म-सुवर्णभस्मयुक्त कल्प असल्याने, उत्तमधातुपोषक, बल, वर्ण, अग्नि व ओजोवर्धक असा कल्प आहे.

१४) विडंगादि लौह - ग्रंथाधार-रसेन्द्रसारसंग्रह, रोगाधिकार - पाण्डु. घटक द्रव्ये-कज्जली, त्रिकटु, जायफळ, लवंग, विडंगचूर्ण, शु. हरताल लोहभस्म व टंकण आदि. गुणधर्म-कृमीरोगामध्ये लांब, गोलाकार, सूत्राकार, चपटे आदि अनेक प्रकारचे कृमी आंत्रामध्ये चिकटून राहिलेले असतात व ते आहार रसाचे आचूषण करतात व त्यामुळे रसधातुपोषणाचा अभाव निर्माण होतो. याप्रकारे धातुगत पोषणक्रम बिघडल्याने निर्माण होणाऱ्या पांडुमध्ये विडंगादि लोह उपयुक्त कल्प आहे.

निरिक्षण - वरील सर्वप्रमुख पाण्डुमध्ये उपयुक्त होणाऱ्या कल्पांचा अभ्यास केला असता आपणास लक्षात येते की, सामान्यतः बहुविध काम्पांमध्ये त्रिफला, त्रिकटु, त्रिमद किंवा त्रिमदमधील मुस्ता नसला तरीही विडंग व चित्रक तसेच लोहभस्म व मण्डूरभस्म याचा प्रामुख्याने अंतर्भाव केलेला आहे. त्रिफला, मुस्ता, चित्रक, लोहभस्म यांचे गुणधर्म भावप्रकाश व रसरंतरंगिणीमध्ये पाहिले असता सर्वच द्रव्ये कफपित्तघ्न आहेत असे लक्षात येते शिवाय, त्रिकटु, विडंग कफघ्न, असून लौहभस्म व मण्डूर भस्म शीतवीर्यात्मक असून पित्तशमनाचे व धातुसाठी रसायन म्हणून कार्य करतात. या प्रमुख द्रव्यांची उपस्थिती असल्याने अधिकाधिक लौह कल्प कफपित्तघ्न म्हणून कार्य करून पाण्डुची चिकित्सा करण्यासाठी उपकारक ठरतात व जेथे गोमूत्र आहे तेथे स्त्रोतरोधप्रधान सम्प्राप्तिचा भंग करून व्याधी उपशय होण्यासाठी कार्य करतात. थोडक्यात आपणास पाण्डुचिकित्सेमध्ये वापरण्यात येणाऱ्या प्रमुख तीन कल्पांचा धातुवरील व अवस्थेनुरूप कार्य-कारण संबंध पुढीलप्रमाणे लावता येईल. (तक्ता पाहा)

लोहकल्पांचा पाण्डुव्याधीमध्ये उपयोग केला असता पुढीलप्रमाणे सम्प्राप्तिभंग लौहकल्पसेवनाने कोष्ठागत अग्निदीपन, धात्वग्निदीपन → क्लेदपचन → उत्तम आहार-रस निर्मिती → रसगतदोषपाचन → स्त्रोतरोधनाश → रसधातुपासून रक्तधातुस आवश्यक पोषकांश प्राप्त → रक्तधातुवृद्धि → उत्तरेात्तर प्राकृत धातुनिर्मिती → रसायन → ओजोवृद्धि.

निष्कर्ष - बृहत्रयीमध्ये वर्णन केलेल्या पाण्डु या व्याधीचा सखोल अभ्यास करून त्याचे हेतु लक्षण सम्प्राप्ति व चिकित्सा यांची योग्य शद्भात सहज समजेल अशी मांडणी केली आहे. या सोबतच पाण्डु या व्याधीमध्ये निर्माण झालेले वैवर्ण्य नाहीसे करण्यासाठी म्हणजेच रक्तधातुला रंजकत्व प्राप्त करून देण्यासाठी लौहभस्माशिवाय पर्याय नसल्याने रस-भैषज्य या विषयासाठी संदर्भित भैषज्यरत्नावली, रसेन्द्रसारसंग्रह, आयुर्वेद सार संग्रहादि ग्रंथांमधील लौहकल्पांचा सूक्ष्म अभ्यास करून विविध अवस्था व दोषानुरूप कोणते लौह कल्प

धातु, अवस्था	नवायास लौह	ताप्यादि लौह	पुनर्नवा मण्डूर
रसधातुवरील कार्य	रसधात्वाग्निवर्धन, रसगतदोषपाचन रसधातुपोषण रसधातुमधील रक्तपोषकांशसार भागनिर्मित	रसधात्वाग्निवर्धन दोषपाचन रसधातुवृद्धि	रसधातुगत, स्त्रोतरोधप्रधान सम्प्राप्ति विघटन
रक्तधातु	दोषपचन, धातुवर्धन	रक्ताधातुबल्य रक्ताधातुरसायन	सामदोषपाचन रक्ताधातुवर्धन
मांसधातु	मांसगत, क्लेदपाचन	मांसशैथिल्य न्हास	क्लेदनाशक, शोधघन मेदोघन
मेदधातु	-	-	-
अस्थिधात	-	-	-
मज्जाधातु	-	मेध्य, मज्जागामी असल्याने अपस्मार मध्येही उपयुक्त -	-
शुक्रधातु	-	रसधातुपासून - शुक्रधातुपर्यंत बल्य व वर्धक	-
अवस्था	१) अग्निमांदयजनित पांडुमधील उत्तम औषध २) अन्नवह स्त्रोतस दुष्टि असताना नवायास लोह वापरावे. ३) रसधातु दुष्टिप्रधान, उपद्रवरहित नव पाण्डु व चिंत्यानां चातिचिंतनात इ. कारण असताना नवायास लौह वापरावे.	१) अपतर्पणजन्य पांडुमधील प्रमुख औषध २) रसापासून शुक्रापर्यंत सम्प्राप्ति असताना ३) विषमज्वरोत्तर निर्माण पाण्डु, सूतिका, गर्मिणी पाण्डु, विषप्रभाव जन्य, विरुद्ध आहार सेवन जन्य पाण्डुमधील औषध	१) पुनर्नवा मण्डूर हे संतर्पणजन्य सम्प्राप्ति असताना वापरावयाचे प्रमुख औषध आहे. २) पांडुमध्ये शोथ असताना वृक्कविकृती, कृमीजन्य पाण्डु इ. अवस्थांमधील औषध.
अवस्था	लौह कल्प		
१) वातपित्तप्रधान पाण्डु असताना, नवीन उपद्रवरहित पाण्डु, रसक्षयामुळे उत्पन्न पाण्डु व्याधी असताना, अग्निमांद असताना २) पित्तप्रधान पाण्डुरोग असताना, चिरकालिन सम्प्राप्ति, रसधातुपासून शुक्रधातुपर्यन्त सम्प्राप्ति असताना, विषमज्वरजन्य पाण्डु, विरुद्धाहारजन्य पाण्डु अपतर्पणजन्य सम्प्राप्ति असताना पाण्डुमधील इन्द्रियशैथिल्य असताना ३) कफज पाण्डुरोग, संतर्पणजन्य पाण्डु, शोथयुक्त पाण्डुमध्ये ४) जीर्ण अम्लपित्ताचा इतिहास असताना व त्यायोगे निर्मित पाण्डुव्याधी ५) पाण्डु व प्रदर व्याधी ६) पाण्डु व यकृतविकार ७) कृतिजन्य व मृदभक्षणजन्य पाण्डु -	नवायास लौह, शतावरी मण्डूर, लोहासव आदि कल्पांची योजना करता येते ताप्यादि लौह, शतावरी मण्डूर, लोहासव, चंदनादि लौह, धात्री लौह, सप्तामृत लौह पुटपक्व विषमज्वर रातक लौह आदि लोहकल्पांची योजना करता येते. पुनर्नवा मण्डूर, त्रिफला मण्डूर, मण्डूर वटक, अयस्कृति अम्लपित्तान्तक लौह, त्रिफला मण्डूर, शतावरी मण्डूर, धात्री लौह आदि कल्प. प्रदशन्तक लौह, शतावरी मण्डूर रोहितक लौह, विषमज्वरांतक, पुटपक्व- पुनर्नवा मण्डूर, मण्डूर वटक या लोहकल्पांचा उपयोग विडंगादि लौह, अयस्कृति, इत्यादि.		
वरीलप्रमाणे शमन चिकित्सा करत असताना पाण्डु व्याधिमध्ये मुख्यतः ज्या भावांचा न्हास झालेला असतो ते भाव म्हणजेच बल, वर्ण व स्नेह यांची पुनः प्राप्ती करण्यासाठी सोबतच गुडूची घृत, द्राक्षा घृत, पथ्याघृत व दाडिमादि घृत यांचा देखील शमन व बृहण स्नेहनार्थ उपयोग करून घेणे आवश्यक आहे. योगरत्नाकर या ग्रंथामध्ये विशिष्ट क्षीर प्रयोगाचे वर्णन केलेले आहे. -“लोहपात्रस्थितं क्षीरं सप्ताहं पथ्यभोजनः। पिबेत्पाण्डवामयी शोषी ग्रहणीदोषपीडितः॥” (यो.र. पाण्डु चिकित्सा) -लोहपात्रामध्ये स्थित दुग्ध सात दिवस सेवन केले असता व पथ्यभोजनाने पाण्डु, शोष व ग्रहणीदोष नष्ट होतो.			

युक्तिपूर्वक वापरता येतील याची प्रभावी पद्धतीने मांडणी करण्याचा प्रयत्न केलेला आहे.

संदर्भ - १) चरकसंहिता - भाग २, व्याख्याकार - डॉ. ब्रह्मानन्द त्रिपाठी, चौखम्बा सुरभारती प्रकाशन २०१२, २) सुश्रुतसंहिता - भाग ३, व्याख्याकार- डॉ. अनन्तराम शर्मा, चौखम्बा सुरभारती प्रकाशन २०१७. ३) भैषज्यरत्नावली - व्याख्याकार - कविराज श्री अम्बिकादत्त शास्त्री, चौखम्बा संस्कृत संस्थान प्रकाशन, २००१. ४) योगरत्नाकर - सार्थ

योगरत्नाकर भाग २ - भाषांतरकार वैद्यराज दत्तो बोरकर, गजानन बुक डेपो प्रकाशन मुंबई १९७४ ५) रसेन्द्रसारसंग्रह - श्रीगोपाल कृष्ण भट्ट विरचित, चौखम्बा संस्कृत संस्थान वाराणसी प्रकाशन, २०१२ ६) आयुर्वेद सारसंग्रह- प्रकाशक- श्री बैद्यनाथ आयुर्वेद भवन २०१८. ७) आयुर्वेदिय औषधीगुणधर्मशास्त्र- वैद्यपंचानन गंगाधर शास्त्री गुणे लिखित, चौखम्बा संस्कृत प्रतिष्ठान प्रकाशन २०११.





Evidence Based Ayurved - A Right Start For Long Run

Dr. Sushant Patil, BAMS,

Marketing Manager - Vikrant and Vismay Division, Shree Dhootapapeshwar Limited.

With the rising popularity of Ayurved system of medicine worldwide, the need for generation of modern scientific evidence has also increased. Evidence Based Ayurved facilitates conscientious and rational use of adequate current scientific evidence for better health care decisions. Evidence is also a key for national and global recognition. Evidence in Ayurved needs to be generated through standardization of medicines and evaluation of their safety, efficacy, and probable mode of action.

A 151-year-old enterprise, **Shree Dhootapapeshwar Limited** feels extremely honoured to be associated with eminent organisations in India and abroad to work in cognizance for contribution towards Evidence Based Ayurved. In this era of Evidence based Medicine, we have been conducting multiple research studies and have published several research papers in National and International Journals through our collaboration with esteemed institutes like IIT Mumbai, G. S. Medical College and KEM Hospital Mumbai, NIRRH Mumbai, D. Y. Patil Ayurved University Mumbai, NIA Jaipur, Parul Ayurved University Vadodara, SDM College of Ayurveda Hassan and K.L.E. Academy Belgavi, etc. Through this write-up we are communicating a glimpse of some of our Research work regarding Standardisation, Preclinical and Clinical Safety and Efficacy.

Suvarna Bhasma (SB) is one of the prime Rasayana medicine widely used in Ayurved system of medicine. Traditionally, Ayurved preparation processes of **SB** are all long, tedious and involve several steps. Therefore, there is a possibility of bypassing the necessary Ayurved processes or non-adherence to all steps or use of synthetic gold particles. In our collaborative research work with the prestigious Indian Institute of Technology, Mumbai we characterised five commercial **SB** preparations from five different manufacturers. Based on characteristic microscopic morphology, it was found that two preparations among them were suspected of being manufactured by non-adherence to the mentioned Ayurved references. Only, **SDL SB** had unique nano-sized, spherical gold particles.^{1,2} **SDL SB** was found to be non-toxic up to a dose equivalent to 10 times the Human Therapeutic Dose (HTD).² The non-genotoxic and

non-mutagenic action of **SDL SB** is also proven.³ The findings of our pioneer work on anxiolytic, non-neurotoxic and protection against rotenone induced Parkinson's-like model in zebrafish using **SB** is under publication.

The findings of our pre-clinical work on proprietary formulation **Hrudroga Chintamani Rasa**, exhibited a significant cardioprotective effect in isoproterenol -induced cardiotoxicity. This cardioprotective potential can be attributed to its potent antioxidant activity and improved **AMP-activated protein kinase (AMPK)** activation.⁴ We are in process of publishing our preclinical research work on pancrea to protective action of a classical preparation **Vasant Kusumakar Rasa** through improved **Sirtuin 1 (SIRT1)** expression. In a recently concluded project, we have studied and documented the **VKR** potential to slow down the progression of peripheral neuropathy in experimental model of T2DM by inhibiting the Wnt/ β -catenin signalling pathway.⁵ We have published our chronic toxicity data on classical formulations **Shwaskas Chintamani Rasa** and **Rasaraj Rasa**. No observed adverse effect level (NOAEL) for both these formulations was set at a dose of **5 times the human therapeutic dose** used.^{6,7}

It is well known that prolonged intake of **Non-Steroidal Anti-inflammatory Drugs (NSAIDs)** may lead to gastric mucosal damage and small intestinal mucosal damage, referred to as enteropathy. **NSAIDs** are often co-prescribed with anti-secretory drugs like Proton Pump Inhibitors (PPIs) and these are reported to worsen enteropathy. **Guggulu** is a known anti inflammatory ingredient and Ayurved advocates the **Guggul Shodhan Vidhi** before its usage as medicine to make it free of adverse effects and to improve its therapeutic efficacy. We have studied the protective action of **Triphala Vishesh Shodhit Guggulu**, **Gomutra Vishesh Shodhit Guggulu** and one of its marketed formulations on small intestinal mucosa. All these 3 preparations prevented the damage to small intestinal mucosa as evidenced by lower histopathological grades, prevention of neutrophil recruitment and preservation of the mucosal barrier as compared to Diclofenac indicating their potential to minimise the risk of enteropathy.⁸

Amlapitta Mishran Suspension is documented for its dose-dependent antiulcer activity in indomethacin induced gastric ulcers in rats which indicates its potential to tackle mucosal offensive and improving defensive factors.⁹ A pilot clinical study on **Amlapitta Mishran Suspension** has reported significant reduction in endoscopic scores along with reduction in clinical symptoms of gastritis measured by the Amlapitta Symptom Rating Scale, Postprandial Distress Syndrome (PPDS) and Epigastric Pain Syndrome (EPS) scores, while being a safe medication.¹⁰ It is a matter of pride to successfully complete a multi-centric clinical trial of **Amlapitta Mishran Suspension** in 204 participants revalidating its clinical efficacy and safety in Amlapitta (Symptomatic Gastritis).¹¹

Iron Deficiency Anemia (IDA) is a common nutrition disorder which can be correlated to the description of Pandurog. The efficacy, safety, and tolerability of **Abhraloha**, our time-tested hematinic formulation has been proven and published. **Abhraloha** treatment exhibited a potent hematinic activity by significantly improving all the blood indices like Hemoglobin, Red Blood Cell indices and serum ferritin levels along with clinical improvement assessed on Pandurog Symptom Rating Scale Score with significantly fewer adverse effects as compared to oral ferrous ascorbate in female participants suffering from IDA.¹² A recent Phase IV clinical study in 100 participants suffering from IDA reconfirmed the hematinic action of **Abhraloha**.¹³

Our recently published data on **Swamala** reports increase in CD4 cell counts in healthy participants indicating better immunity thus reducing the likelihood of illnesses. **Swamala** consumed in a dose of 20 grams per day for a duration of 90 days was also found to be safe for liver and kidneys.¹⁴

Solumiks Herbaceuticals Limited (SHL), a group concern of **Shree Dhootapapeshwar Limited**, was spun off as a separate Company in 1991 and markets more than 30 proprietary formulations to Ayurved and Modern Doctors. The flagship brands of **SHL** include **Myostaal Liniment** and **Myostaal Forte Tablets** for external and internal joint care and support. In a unique and first-of-its-kind clinical study, massage with **Myostaal Liniment** along with Physiotherapy regimen reported significant improvement in Knee Muscle Strength of both index (affected) and non-index (unaffected) knees as

assessed on Push-Pull Dynamometer in participants suffering from unilateral Knee Osteoarthritis. In addition to improvement in Knee Muscle Strength, a safe improvement in WOMAC scale, Six minute Walk Test and Five times Sit to Stand Test was reported.¹⁵ **Myostaal Forte Tablets** are documented for their clinical efficacy comparable to Paracetamol 650 mg in participants suffering from Knee Osteoarthritis and it also exhibited a sustained action as compared to Paracetamol 650 mg.¹⁶ **Myostaal Forte** is also documented for its **Cartilage Preserving Potential** by inhibiting the synthesis of **Matrix metalloproteinase-13 (MMP-13)** and **Cartilage oligomeric matrix protein (COMP)**.^{17,18}

Our, 151-year-old enterprise, **Shree Dhootapapeshwar Limited** is fortunate to be in the forefront of the competition and for standing tall in **Evidence Based Research**. It is a matter of great repute to be associated with **Tilak Ayurved Mahavidyalaya, Pune** an institution with more than 90 years of legacy to create eminent Ayurved Physicians who are working great heights for the benefit of society and we stand along with them to take the **Science Driven Legacy** of Ayurved forward.

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Vd. P. S. Nanal Hospital Organized Seminar on "Integrated approach to Ophthalmology"

Report

डॉ. प्रमोद प्र. दिवाण

दिनांक १८ जून २०२३ रोजी सकाळी १० वाजता आयुर्वेद रसशाळा ऑडिटोरियम येथे "Integrated approach to Ophthalmology" या विषयावर अर्ध दिवसीय चर्चासत्र आयोजित करण्यात आले होते. या चर्चासत्रात डॉ. सचिन आठल्ये - D.N. B. Ophthalmology & Fellow in Cornea and anterior segment यांनी "Do's and Don'ts while treating eye diseases" या विषयावर व्याख्यान दिले. तसेच वैद्या डॉ. प्रीती अभ्यंकर यांनी "प्रॅक्टिस मध्ये आयुर्वेदीय नेत्ररोग चिकित्सा" या विषयावर व्याख्यान दिले.

डॉ. निलाक्षी प्रधान, प्राध्यापक व विभाग प्रमुख, नेत्ररोग

विभाग, सुमतीभाई शाह आयुर्वेद कॉलेज, हडपसर यांनी या चर्चासत्राचे समन्वयन केले. उपस्थितांचे स्वागत डॉ. प्रमोद प्र. दिवाण यांनी केले डॉ. भाग्यश्री कश्यप यांनी या कार्यक्रमाचे सूत्रसंचालन व आभार प्रदर्शन केले. ६० वैद्य व विद्यार्थी वगैरे या चर्चासत्राचा लाभ घेतला. या चर्चासत्रास रा. शि. मंडळाचे अध्यक्ष डॉ. दि. प्र. पुराणिक व नानल रुग्णालयाचे अध्यक्ष डॉ. वि. वि. डोईफोडे, तसेच नानल रुग्णालयाचे अनेक मानद चिकित्सक उपस्थित होते. चर्चासत्रानंतर झालेल्या १ तासाच्या प्रश्नोत्तरांनंतर अर्ध दिवसीय चर्चासत्राची सांगता झाली



18/6/2023 - An Integrated Approach to Ophthalmology.

उजवीकडून - डॉ. आठल्ये, डॉ. प्रधान, डॉ. पुराणिक, डॉ. डोईफोडे, डॉ. दिवाण, डॉ. अभ्यंकर, डॉ. कश्यप



डॉ. सचिन आठल्ये
व्याख्यान सादर करतांना



डॉ. प्रीती अभ्यंकर
व्याख्यान देतांना

आयुर्वेद रसशाळा - ८८ वा वर्धापन दिन

डॉ. सुहास कुलकर्णी, जनरल मॅनेजर, आयुर्वेद रसशाळा, पुणे.

राष्ट्रीय शिक्षण मंडळाची घटक संस्था असलेल्या आयुर्वेद रसशाळेचा ८८ वा वर्धापन दिन १ ऑगस्ट २०२३ रोजी साजरा करण्यात आला. आयुर्वेद रसशाळा सभागृहामध्ये पार पडलेल्या कार्यक्रमाचे अध्यक्ष म्हणून राष्ट्रीय शिक्षण मंडळाचे अध्यक्ष डॉ. दि. प्र. पुराणिक उपस्थित होते. कार्यक्रमाचे प्रमुख अतिथी म्हणून डॉ. राघवेंद्र गायकैवारी - संस्थापक, अध्यक्ष व कार्यकारी संचालक, हाय टेक् बायोसायन्सेस् इंडिया, पुणे. तसेच विशेष अतिथी म्हणून प्रो. डॉ. दिगंबर मोकाट - प्रमुख संशोधक व विभागीय संचालक, RCFC (WR), वनस्पतीशास्त्र विभाग, सावित्रीबाई फुले पुणे विद्यापीठ, पुणे हे उपस्थित होते. आयुर्वेद रसशाळेचे अध्यक्ष डॉ. वि. वि. डोईफोडे, राष्ट्रीय शिक्षण मंडळाचे सचिव मा. डॉ. राजेंद्र हुपरीकर तसेच राष्ट्रीय शिक्षण मंडळाच्या नियामक मंडळाचे मान्यवर सदस्य उपस्थित होते.

आयुर्वेद रसशाळेची मातृसंस्था असणाऱ्या राष्ट्रीय शिक्षण मंडळाच्या शतकपूर्ती महोत्सवानिमित्त आयुर्वेद रसशाळेच्या वतीने १०० औषधी वृक्षारोपणाचा संकल्प करण्यात आला आहे. त्यानुसार डॉ. राघवेंद्र गायकैवारी, प्रो. डॉ. दिगंबर मोकाट तसेच डॉ. दि. प्र. पुराणिक यांचे हस्ते प्रातिनिधिक स्वरूपात वृक्षारोपण करण्यात आले. तसेच मा. डॉ. राजेंद्र हुपरीकर व डॉ. वि. वि. डोईफोडे यांनी वृक्षारोपण केले. वर्धापन दिनाच्या कार्यक्रमाची सुरवात धनवंतरी स्तवन व पूजनाने करण्यात आली. डॉ. वि. वि. डोईफोडे यांनी उपस्थितांचे स्वागत केले व प्रस्तावना स्वरूपात आयुर्वेद रसशाळेच्या आजपर्यंतच्या प्रवासाचा आढावा घेतला.

आयुर्वेद रसशाळेच्या कामकाजाच्या दिवसांमध्ये सर्वाधिक उपस्थिती असणाऱ्या श्री. हिरू वनगे, श्री. अमित गव्हाणे, श्री. बाजीराव पोकाळे, कुमारी निर्मला सासवडकर, सौ. उमा खांबे, सौ. रेणुका चव्हाण या कामगारांचा तसेच कर्मचाऱ्यांमध्ये श्री. निलेश कुलकर्णी यांचा सत्कार प्रो. डॉ. दिगंबर मोकाट यांचे हस्ते करण्यात आला. तसेच मार्केटिंग विभागामध्ये उत्तम कामगिरी करणाऱ्या श्री. विवेक शिलेदार व सौ. सोनाली कुलकर्णी या सेल्स स्टाफचा सत्कार सुद्धा प्रो. डॉ. दिगंबर मोकाट यांचे हस्ते करण्यात आला. त्यानंतर प्रो. डॉ. दिगंबर मोकाट यांनी मनोगत व्यक्त केले. आयुर्वेदामध्ये औषधी वनस्पतींचे असलेले महत्त्व व या औषधी वनस्पती उपलब्ध करून देण्यासाठी सध्या सुरू असलेले प्रयत्न याबाबत प्रो. डॉ. मोकाट यांनी सविस्तर विवेचन केले.

आयुर्वेद रसशाळेच्या कामगार व कर्मचाऱ्यांमधील श्री. तेजस लोंढे, श्री. कौस्तुभ मोरे, सौ. शोभा देशमाने, श्रीमती रसिका विरकूड

या कामगारांचा गुणवंत कामगार म्हणून व कर्मचाऱ्यांमध्ये श्री. धनंजय नाचरे यांचा गुणवंत कर्मचारी म्हणून सत्कार डॉ. राघवेंद्र गायकैवारी यांचे हस्ते करण्यात आला.

राष्ट्रीय शिक्षण मंडळाच्या शतकपूर्ती महोत्सवानिमित्त आयुर्वेद रसशाळेच्या वतीने संधिवात, त्वचाविकार या विकारांवर उपयुक्त ठरणाऱ्या टॅब्लेट व मलम या प्रकारच्या ६ औषधांचे उत्पादन सुरू करण्याचा निर्णय घेतला आहे. या औषधांचे विमोचन डॉ. राघवेंद्र गायकैवारी यांचे हस्ते करण्यात आले. त्यानंतर डॉ. राघवेंद्र गायकैवारी यांनी मनोगत व्यक्त केले. आयुर्वेद रसशाळेच्या नवीन औषधांबद्दल माहिती देताना आयुर्वेद रसशाळेने विशिष्ट ध्येय समोर ठेऊन पुढील वाटचाल करावी अशी इच्छा त्यांनी व्यक्त केली व आयुर्वेद रसशाळेच्या पुढील वाटचालीस डॉ. गायकैवारी यांनी शुभेच्छा दिल्या. आयुर्वेद रसशाळेच्या सर्व विभागांमध्ये सर्वात उत्तम विभाग म्हणून क्वालिटी कंट्रोल विभागाची निवड करण्यात आली. या विभागास डॉ. दि. प्र. पुराणिक यांचे हस्ते पुरस्काराने गौरवण्यात आले. त्यानंतर अध्यक्ष डॉ. दि. प्र. पुराणिक यांनी मनोगत व्यक्त केले. राष्ट्रीय शिक्षण मंडळाच्या घटक संस्थांबद्दल माहिती देत शतक महोत्सवी वर्षात या संस्थांतर्फे करण्यात येणाऱ्या विविध उपक्रमांची माहिती थोडक्यात उपस्थितांना दिली. आयुर्वेद रसशाळेच्या भविष्यातील वाटचालीस त्यांनी शुभेच्छा दिल्या.

आयुर्वेद रसशाळा समितीचे सदस्य डॉ. मंदार रानडे यांनी उपस्थितांचे आभार मानले. कार्यक्रमाचे सूत्रसंचालन आयुर्वेद रसशाळा समितीच्या सदस्या डॉ. अपूर्वा संगोराम यांनी केले.



वृक्षारोपण करतांना डॉ. पुराणिक. चित्रात डावीकडून - डॉ. धनवट, डॉ. प्रमोद कुलकर्णी, डॉ. पुराणिक, डॉ. डोईफोडे, डॉ. रानडे, डॉ. सुहास कुलकर्णी, डॉ. मोकाट



नवीन औषधांचे विमोचन. डावीकडून - डॉ. उरणे, डॉ. कुलकर्णी, डॉ. डोईफोडे, डॉ. मोकाट, डॉ. पुराणिक, डॉ. गायकैवारी, डॉ. हुपरीकर



अल्पस्यापि महार्थत्वं प्रभूतस्य अल्पकर्मताम् ।...

डॉ. अपूर्वा संगोराम, कार्यकारी संपादक

The ultimate aim of Ayurveda is to maintain the health of healthy individuals and treat the unwell. Thus keeping the mankind healthy.

Ayurvedic treatment is based on Trisutra: Hetu, Linga and Aushadh. Thus, Aushadh is one of the main tools by which Vaidya is able to treat the patients.

Dravya basically is of 3 types by origin. Plant origin, Animal origin and Mineral origin.

The term Rasa denotes Parada. By using parada, different metals, minerals etc., various medicines are prepared. They come under Rasashastra and Bhaishjya kalpana where various different kalpanas / drugs are invented. For these medicines many processes like shodhana, marana, amrutikaran, bhasma etc are required. If these processes are followed properly it has been observed that the drugs give highest results.

Various newer more potent drugs are invented. Rasaushadhis are the herbomineral formulations where medicines are prepared by combining different types of Dravya in order to increase its bio availability, potency, shelf life, palatability, lesser dose etc.

In Ashtang Hridaya, in kalpasthan Acharya Vagbhat has mentioned the ideal way a medicine should be prescribed by the physician.

अल्पस्यापि महार्थत्वं प्रभूतस्य अल्पकर्मताम् ।

कुर्यात् संश्लेष विश्लेष कालसंस्कारयुक्तिभिः ॥ (अ.ह.कल्प२/६१)

Due to Globalisation and after Covid times, demand for Ayurvedic medicine has increased. Due to online selling platforms, social media, our medicine has reached to masses. So now it has also become a challenge for Ayurveda practitioners, Ayurvedic Pharmacies to provide a potent drug which will not result in ADRs. For this following guidelines given in Classics as well as standardization processes made mandatory by governing bodies is absolutely necessary to maintain Identity, Quality and Purity of the drug.

Considering all the above aspects department of Rasashastra Evum Bhaishjya kalpana of CPGS&RA of Tilak Ayurved Mahavidyalaya Pune hss organized a National Seminar on "Principles to practices of Ayurvedic Pharmaceutics" on 26th and 27th of August 2023. This seminar provided an in-depth knowledge given by eminent experts from this field. I congratulate for grand success of this Seminar. 🌸🌸🌸

९ फेब्रुवारी २०२३ ते ९ फेब्रुवारी २०२४ हे

‘राष्ट्रीय शिक्षण मंडळ’ पुणे चे शतक महोत्सवी वर्ष!

या निमित्त रा. शि. मंडळ संचालित ‘आयुर्विद्या मासिक’ या वर्षी काही विशिष्ट संकल्पनांवर आधारित अंक प्रकाशित करणार आहे. तज्ज्ञांनी या विषयासंदर्भातील शास्त्रीय लेख, रुग्णानुभव (Case Study) व संशोधन पर लिखाण त्वरीत पाठवावेत. योग्य वेळेत प्राप्त झालेले व Peer Reviewed Evaluation पूर्ण केलेले लेख निश्चितच प्रकाशित केले जातील. ● आयुर्विद्या - ऑक्टोबर २०२३ - पंचकर्म विशेषांक असेल. ● आयुर्विद्या - नोव्हेंबर २०२३ - शालाक्य विशेषांक असेल. ● आयुर्विद्या - डिसेंबर २०२३ - कायचिकित्सा व रसायन-वाजीकरण विशेषांक असेल.

जाहीर प्रगटन/आवाहन





प्रगतीशील संशोधने!

डॉ. सौ. विनया दीक्षित, उपसंपादक

औषधीकल्पांची योजना हे 'युक्तीज्ञ' वैद्याचे कौशल्य जोखणारे असते. आयुर्वेदीय औषधीकरणात यासाठी अनेक मूलभूत 'मंत्र'वत् सिद्धांत विविध ग्रंथांत सविस्तर विवेचन केलेले दिसतात. सर्वप्रकारच्या मूलद्रव्यांपासून शोधनादी संस्कारानंतर विविध कल्पना, औषधी कल्पांची सिद्धीलक्षणे, मात्रा, अनुपान, सेवन कालावधी व अहितकर परिणामांची लक्षणे दिसल्यास त्यांची चिकित्सा-उपचार इ. सर्वच आयुर्वेदीय संहितांमध्ये व नंतर समाविष्ट रसग्रंथांमध्ये सविस्तर वर्णित आहे. तरीही आजच्या जीवनशैलीला साजेसे व नवनवीन रोगांना अटकाव करणारे 'औषधीकल्प प्रकार' समाजाच्या कल्याणासाठी व शास्त्राच्या प्रगतीसाठी नितांत आवश्यक आहेत.

नैसर्गिक चिकित्सा पद्धतीच्या सध्याच्या काळात रसौषधीबाबत अनेकविध 'पूर्वग्रह' व नकारात्मक भावना केवळ रुग्णांमध्येच नव्हे तर वैद्यगणांमध्येही आढळतात. त्यामुळे २० व्या शतकात एड्स, कर्करोग, क्षयरोग इ. महाघोरव्याधी समुच्चयांशी दोन हात करताना अधिक लोकप्रिय झालेले रसकल्प विशेषत. सुवर्ण-हिरकादी भस्मे, सिंदूरकल्प हे काही प्रमाणात आता २१ व्या शतकात मागे पडलेली दिसतात. काष्ठौषधींचा वारेमाप वापर व ज्याला अतिशय नाशकारी उधळपट्टी म्हणता येईल अशी तोडणी यामुळे अनेक गुणकारी वनौषधी 'दुर्मिळ' या गटात गेल्या आहेत. त्यामुळे सध्याच्या रुग्णसमाजाला हवे असणारे वनस्पतीज कल्प बनवणे हेच आव्हानात्मक ठरत आहे.

याचबरोबर पंचकषायकल्पना, स्नेहपाक, संधान, अवलेह, चूर्ण, गुटी, अर्क-क्षार-सत्वादी ज्या औषधीकल्पना काही शतके वापरात आहेत त्यात खंडपाकाच्या पुढचे ग्रॅन्युलस् किंवा संधानीत काढे, कॅप्सुलस्, सिद्धतैले व घृताच्या स्फॉटजेल कॅप्सुलस्, इ. काही मोजकी उदाहरणे सोडली तर

पोटातून घेण्याच्या औषध प्रकारात फारशी वैविध्यता आजही नव्याने तयार झालेली नाही. बाह्योपचारार्थ लागणारे लेप, मलम, तैल, उद्धर्तनादी चूर्ण यांमध्येही मुखकल्पांत गंडूषद्राव, केश्य कल्पांत अर्क मिश्रणांचे द्राव इ. एक दोन प्रकार वगळता नव्या पद्धतीची औषधीयोजना आयुर्वेदीय रुग्णचिकित्सेत अजून ही फारशी दिसत नाही.

सध्या वनस्पतीज औषधामधेही संशोधनांती काही हानिकारक खनिजांचे अंश सापडल्यावर सुशिक्षित रुग्णसमाज विशेषत: परदेशस्थ नागरिक हे बाह्योपचारांना प्राधान्य देतात. किंबहुना तशी आग्रही मागणी वैद्यांकडे करतात. अशा परिस्थितीत शालाक्यतंत्रातील क्रियाकल्प, स्थानिक स्नेहस्वेद व बस्ती इ. प्रयोग, व्रण चिकित्सा, इ. अध्यायांमध्ये वर्णित बाह्योपचार हे संशोधनांद्वारा पुनः सिद्ध करून, नवेनवे औषधी कल्पांचे प्रकार तयार करून ते पशु व रुग्ण चिकित्सांद्वारा प्रमाणित करून, सर्वरुग्णांसाठी वापरण्यास उपलब्ध करून देणे हीच काळाची गरज आहे.

अनेक दशके ग्रंथातील योग व पाठ यांना नव्या कल्पनांमध्ये संयोजित करून वापरण्यास योग्य व प्रमाणित कल्पांची भर आयुर्वेदीय औषधीनिर्माण शास्त्रात फारशी झालेली दिसत नाही. त्यावर प्राधान्यक्रमाने लक्ष केंद्रीत करून सर्व शैक्षणिक, संशोधन संस्था व फार्मसी कंपन्यांनी जोरकस प्रयत्न करणे गरजेचे आहे. वैद्यकीय व्यावसायिकांना उपयुक्त व संशोधनाने प्रमाणित पर्याय उपलब्ध करून देणे हे 'रसशास्त्रींचे' आद्यकर्तव्यच आहे. यासाठीच Principles to Practices of Ayurvedic Pharmaceutics या राष्ट्रीय सेमिनारचे आयोजन राष्ट्रीय शिक्षण मंडळाच्या C.P.G.S.& R.A तर्फे टिळक आयुर्वेद महाविद्यालयात केले गेले संयोजकांचे या प्रगतीशील कृती बदल हार्दिक अभिनंदन!



रोटरी पुरस्काराने सन्मानित
आरोग्यदीप २०१७ व २०१८



आरोग्यदीप २०१९
छंदश्री आंतरराष्ट्रीय दिवाळी अंक स्पर्धा
द्वितीय पारितोषिक विजेता.

सुखी दीर्घायुष्याचा कानमंत्र देणारा...

स्वागत!

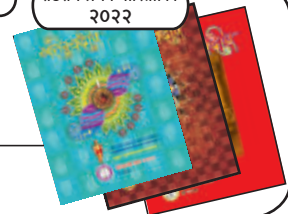
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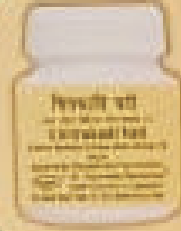
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रोटरीचे प्रथम पारितोषिक
२०२२



आयुर्वेद रसशाळा, पुणे यांची गुणकारी व उपयुक्त उत्पादने...



चित्रकादि वटी

अग्निमान्द्य, आममज्जक,
भूक नाहवण्यासाठी,
अथ पचनशक्ती वाढवण्यासाठी.



सिकोरा

तहान मुलांमध्ये
सर्व प्रकारच्या
खोकल्यावर उपयुक्त,
कास कमी करून
कास पालळ
करण्यासाठी मदत करते.



वर्माल

तहान मुलांमध्ये
ज्वर, अजीर्ण,
अवयवन अवस्थित न होणे
ज्या तज्ज्ञावर उपयुक्त,
ज्वर होण्याची प्रवृत्ती नष्ट होते,
मोठ्या मालमागणीही अर्जल
जाग्यालही उपयुक्त.



प्रताळ पंचामृत रस

पित्तविकार,
पोटात आग होणे,
अजारी पचन
अवस्थित न होणे
यावर उपयुक्त.



रसशाळा

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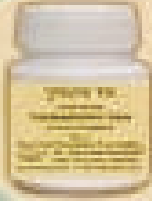
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केसाईट

रसादीनाची उत्तुल,
पशुतोषासमे उत्तुल.



पुष्पचन्दा रस

पित्त, वात, कफ,
विषम, विषम,
रसादीनाची उत्तुल
आले पुष्पचन्दा रस
उत्तुल.



**रजःप्रवर्तनी
वटी**

रजः, अर्श, विषम,
विषम, विषम,
विषम व पुष्पचन्दा
उत्तुल.



सूक्ष्मभिफळा वटी

पित्त, वात, कफ,
विषम, विषम,
रस, सुदी, आले,
विषम, विषम, उत्तुल.



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