

DOCUMENTATION OF COMMONLY USED AYURVEDIC FORMULATIONS

Dr. Sudhikumar KB¹, Dr. Sailekha P²

¹Professor, ²Research Assistant, School of Fundamental Research in Ayurveda (KUHS), Tripunithura, Ernakulam 682301, India

ABSTRACT :

Ayurveda is the science of life that practices holistic principles that primarily concentrated on personalized health. It has a rich compendium of formulations that are used extensively with marvelous results. In day-to-day practice, practitioners maybe diverging from the textual references regarding their usage. School of Fundamental Research in Ayurveda has taken initiation and has surveyed the usage of commonly used formulations that helped to understand the extent of their divergence from the literature. This study points out the necessity for adopting measures that should be followed to expect the desired effect from a formulation. The data collected from the survey is useful for further researches related to the standardization and utilization of Ayurvedic formulations.

KEYWORDS: *Ayurvedic formulations, Documentation, School of Fundamental Research in Ayurveda*

INTRODUCTION

Ayurveda is one of the traditional systems of medicine that practices holistic principles that primarily concentrated on personalized health. Charaka Samhita, Sushruta Samhita and Ashtanga Hridaya of Vagbhata are the main classics, which give detailed descriptions of over 700 herbs and 6,000 formulations. Life in Ayurveda is conceived as the union of the body, senses, mind, and soul, and the theory of Prakriti or individual nature has a pivotal role in Ayurveda therapeutics.

Ayurveda being a personalized medicine, emphasize health promotion, disease prevention, early diagnosis, and personalized treatment. Even though Ayurveda is an ancient science of life and has a long history, its basic principles are valid even today. However, the core of any science is a continuous quest for new knowledge through research, evolution, and newer applications. The geo-climatic environment, plants, animals, and microbes have changed. Human behavior, lifestyle, and genetics have changed. Clearly, judicious contemporary modifications should be made in Ayurveda also without losing its essence. Continuous research on the safety, quality, and efficacy of Ayurvedic drugs and procedures is needed. Systematic documentation and critical analysis of clinical practice are also necessary. Reverse pharmacology helps to reverse the routine clinical practice to the laboratory examination for the proper validation. It also helps to develop new drug candidates or formulations from previously known facts in traditional medicines through profound preclinical and clinical researches.

Previous researches authorized a few concepts of herbal drugs by reverse pharmacology, which is certainly great work for Ayurveda. Such researches created much interest in researchers towards herbal medicine and consequently, in the last decade, demand for Ayurveda has increased in the medical world. The reverse pharmacology approach can help in reducing failure rates of the clinical implication of the herbs or their formulations that are already described in Ayurveda. This approach allows seeking new synergistic combinations and improvements in bioavailability and innovative approaches that can play a vital role in drug development.

DOCUMENTATION OF COMMONLY USED AYURVEDIC FORMULATIONS

The Ayurvedic world should imperatively identify and address the need for scientific evidence. Systematic documentation, appropriate methodology, and rigorous analysis followed by translating the outcomes into practice remain crucial to move towards evidenced-based Ayurveda.

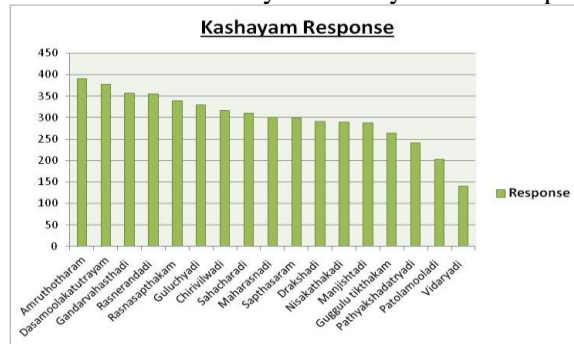
School of Fundamental Research in Ayurveda is an establishment under Kerala University of Health Sciences with a mission to develop and elaborate on the traditional knowledge base of Ayurveda through evidence-based and interdisciplinary research. One of the objectives of the school is to do validation and standardization of Ayurvedic medicines and therapeutic procedures. As an initial step to accomplishing this step, the school has decided to make efforts in documenting the commonly used formulations. For such a study, the clinical experience of eminent practitioners is indispensable. Hence as a primary step, an observational study was conducted with the participants as the Ayurveda practitioners of Kerala.

The documentation study aims to catalog the commonly used Ayurvedic formulations and to study the preference of Ayurvedic practitioners regarding the selection of Ayurvedic formulations, the method of administration, and dosage. The knowledge earned from this research can be utilized for many further detailed studies like promoting less used medicines, efficacy studies, decision making on doses, and many other such areas. To accomplish the documentation of commonly used formulations, a questionnaire with 22 questions was generated in Google forms and sent to the faculties of Ayurveda colleges through email. The snowball method was used for sampling. This form was also sent to other practitioners through WhatsApp and was requested to forward it to their acquaintances. A total of 444 responses were received within a short period of 15 days and the data is analyzed and presented with appropriate graphs and diagrams.

ANALYSIS OF THE SURVEY

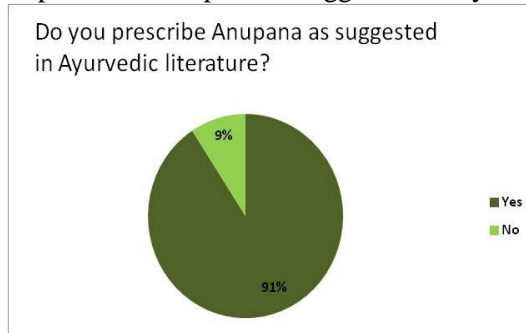
The questionnaire generated and the response received is analyzed and data thus obtained is presented using appropriate diagrams. Each question and their responses are mentioned below.

Figure 1: Common Kashaya used in your clinical practice



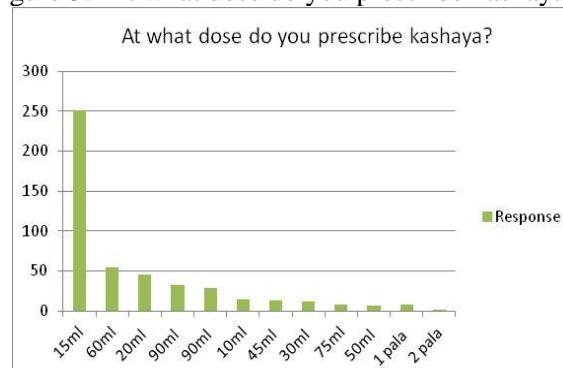
Observation: According to the survey, the most commonly used Kashaya among Ayurvedic practitioners of Kerala chose Amruthotharam Dasamoolakatutrayam, Gandarvahasthadi Kashayam, Rasnerandadi Kashayam, etc.

Figure 2: Do you prescribe Anupana as suggested in Ayurvedic literature?



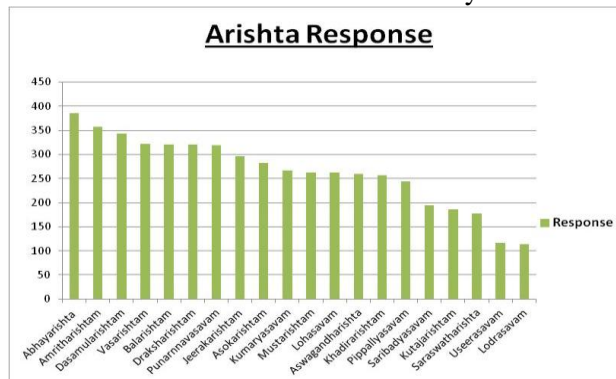
Observation: To the question about the usage of specific anupanas as Acharyas have mentioned for Kashaya, the majority of the Survey Participants responded as they are using those anupanas.

Figure 3: At what dose do you prescribe kashaya?



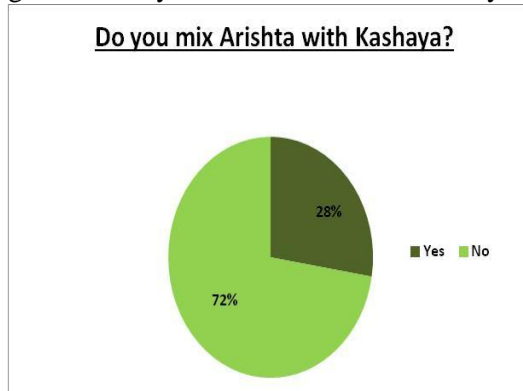
Observation: The majority of the participants are prescribing 15ml kashaya as a single dose and next comes 60ml and 20ml.

Figure 4: Which is the common Arishta used in your clinical practice?



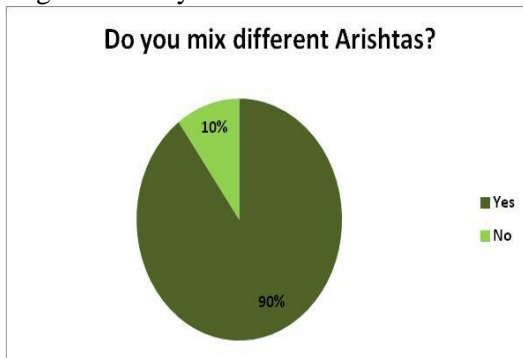
Observation: The first choices of Practitioners who attended the survey are Abhayarishtam, Amrutharishtam, and Asokarishta. Other than mentioned in the options Saraswatharishtam, Nimbamrutha asavam, Chandanasavam, etc. were also mentioned.

Figure 5: Do you mix Arishta with Kashaya?



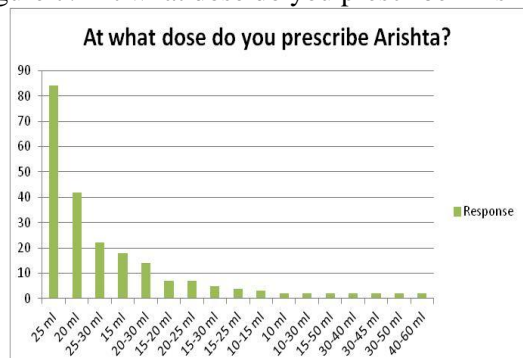
Observation: The majority of the doctors who participated in this survey are not mixing Arishta with Kashaya.

Figure 6: Do you mix different Arishtas?



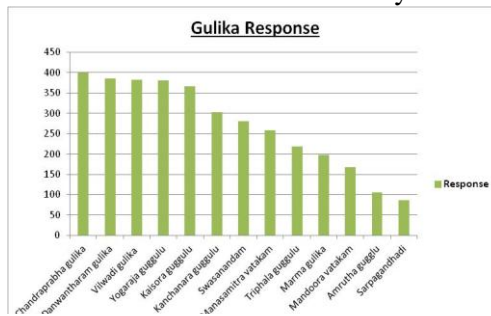
Observation: 90% of the participants are prescribing combinations of Arishta while few are not practicing this method.

Figure 7: At what dose do you prescribe Arishta



Observation: From the survey conducted, the majority of participants prescribe 25ml of Arishta as a single dose. The posology, analyzed from this survey ranges from 2 ml to 100ml.

Figure 8: Which is the common Gulika used in your clinical practice?



Observation: Chandraprabha Gulika, Dhanwantharam Gulika, Vilwadi Gulika, Yogaraja Guggulu, and Kaisora Guggulu are the most commonly used Gulika preparations among the practitioners who participated in this Survey.

Figure 9: Do you prescribe Anupana as suggested in Ayurvedic literature?

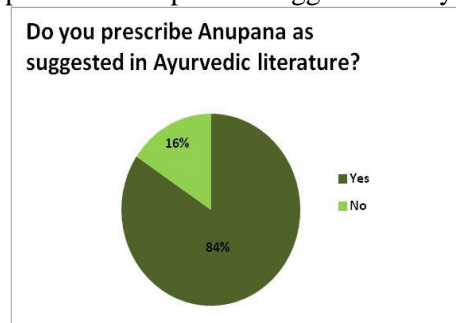
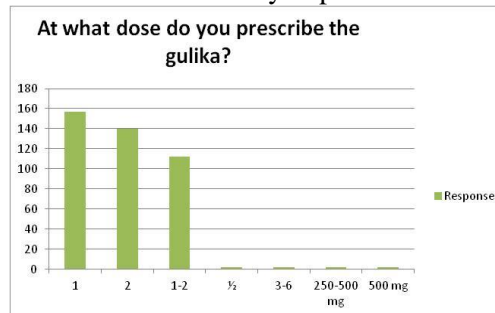
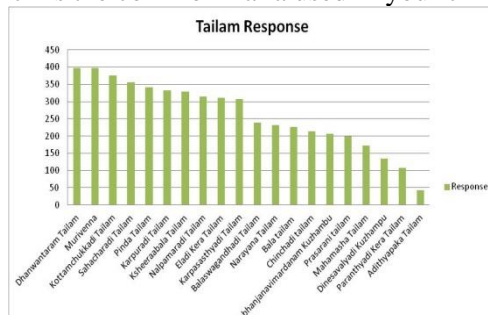


Figure 10: At what dose do you prescribe the Gulika?



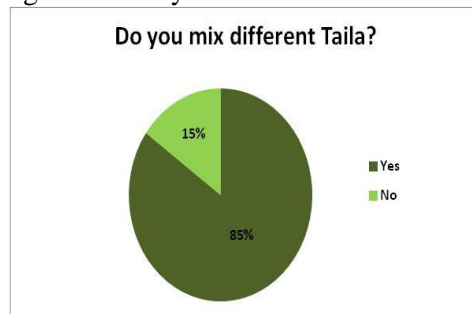
Observation: According to the survey, the Majority of the practitioners are giving one tablet at a time irrespective of the weight of the tablet followed by two tablets.

Figure 11: Which is the common Taila used in your clinical practice?



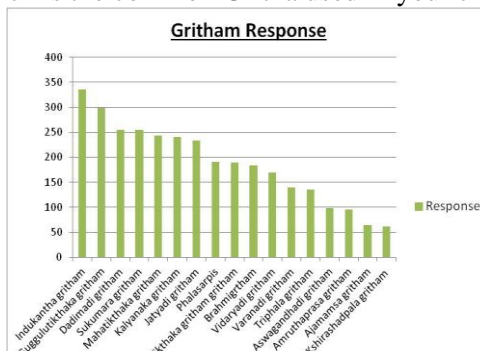
Observation: Dhanwantaram Tailam, Murivenna, Kottamchukkadi Tailam, Sahacharadi Tailam, and Pinda Tailam are on the top of the list of choices.

Figure 12: Do you mix different Taila?



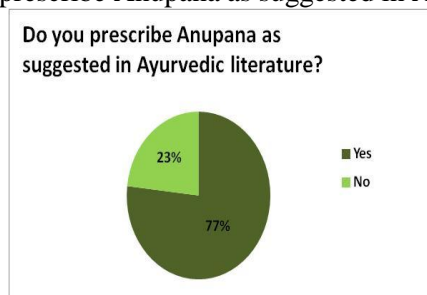
Observation: Mixing of Taila is done in various conditions and the majority of the Practitioners mix different Taila according to the survey.

Figure 13: Which is the common Gritha used in your clinical practice?



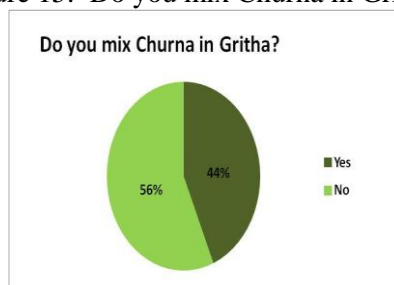
Observation: The most commonly used Gritha by the practitioners attended the survey are Indukantha Gritha, Guggulu Tikthaka Gritha, Dadimadi Gritha, Sukumara Gritha, etc.

Figure 14: Do you prescribe Anupana as suggested in Ayurvedic literature?



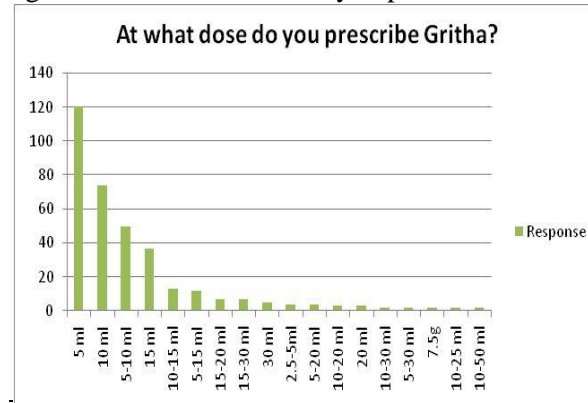
Observation: According to the survey, the majority of the participants prescribe Anupana as described in Ayurvedic literature.

Figure 15: Do you mix Churna in Gritha?



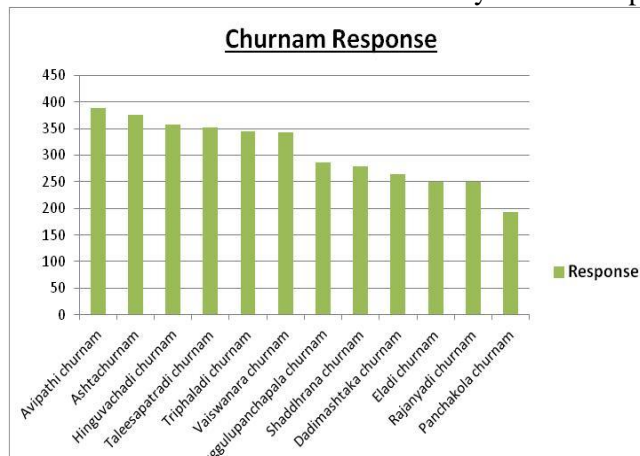
Observation: Regarding the mixing of Churna in Ghritha, more than half of the participants are not mixing Churnas

Figure 16: At what dose do you prescribe Gritha?



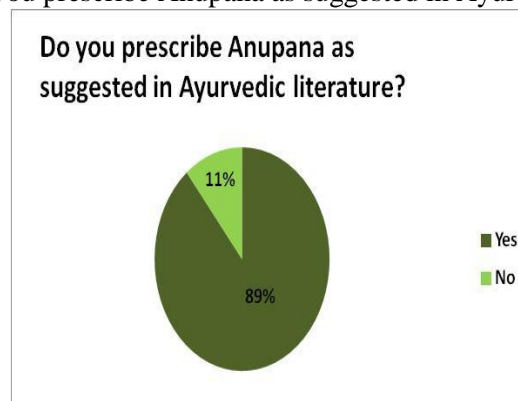
Observation: According to the survey, the majority of practitioners prescribe 5ml of Gritha as a single dose and then comes 10ml, 15ml, etc.

Figure 17: Which is the common Churna used in your clinical practice?



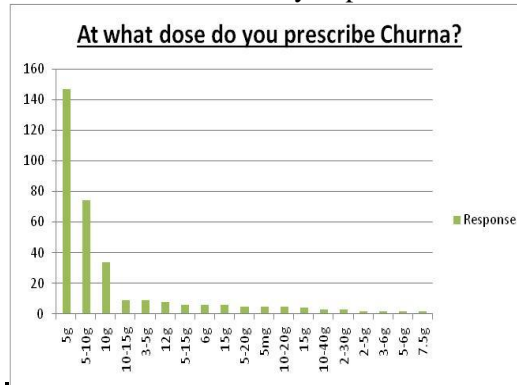
Observation: The most common churnas prescribed by the practitioners who attended the survey are Avipathi churnam, Ashta churnam, Hinguvachadi churnam, etc.

Figure 18: Do you prescribe Anupana as suggested in Ayurvedic literature?



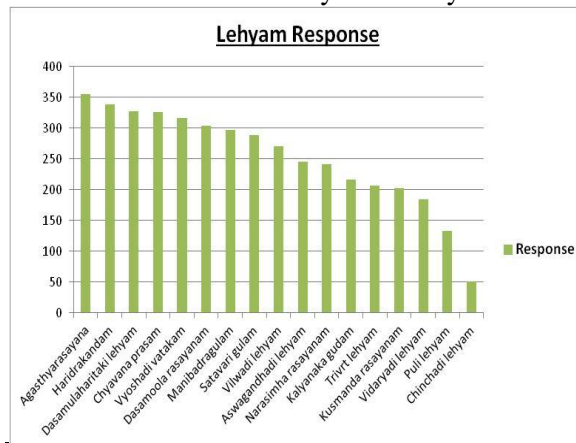
Observation: According to the survey, the majority of the participants prescribe Anupana for Churna as mentioned in Literature.

Figure 19: At what dose do you prescribe Churna?



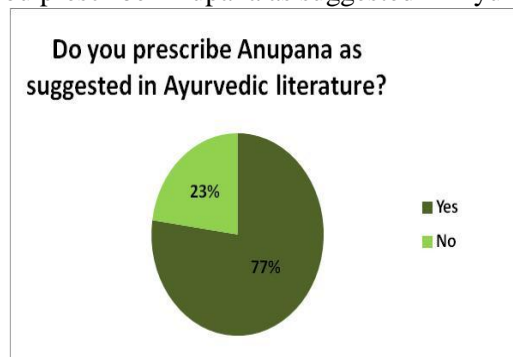
Observation: Most of the practitioners who participated in the survey claimed to prescribe Churna in a dose of 5g followed by 10, 3.5, and 12 grams

Figure 20: Which is the common Lehya used in your clinical practice?



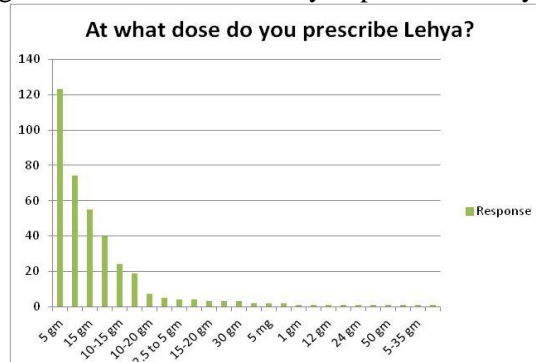
Observation: According to the survey, the commonly prescribed Lehyam are Agasthya Rasayana, Haridrakandam, Dasamulharitaki Lehyam, etc.

Figure 21: Do you prescribe Anupana as suggested in Ayurvedic literature?



Observation: The majority of the participants are prescribing Anupana for Lehya as prescribed by Acharyas.

Figure 22: At what dose do you prescribe Lehya?



Observation: According to the survey, the commonly prescribed dose of Lehya is 1tsp that is 5ml followed by 10ml and 15ml.

DISCUSSION

Kashaya: Kashaya is prepared by boiling 1 part of the herb with 16 parts of water in an open vessel on mild fire till it reduces to one-eighth of the original quantity [1]. The synonyms are Shruta, kwatha, and Niryuha. The quantity of water maybe four times, eight times, or sixteen times the quantity of the part of the plant depending on the hardness of the drug used.

In Sahasrayoga, which is one of the most important classics in Ayurveda compiled by the Kerala tradition of Ayurvedic Practitioners, more than 400 kashaya are mentioned [2]. Major Pharmaceutical companies in Kerala are not manufacturing more than 100 kashaya and out of that, only a few kashayas are commonly used by today's practitioners. From the survey conducted, 390 people chose Amruthotharam Kashayam as their commonly used kashayam followed by dasamoolakatutrayam Kashayam (378), Gandarahasthadi Kashayam (357), Rasnerandadi Kashayam (355), and so on. Apart from the 10 options provided, 44 other kashayas were also mentioned as commonly used.

Regarding anupanas for kashayas, we have a lot of references. In Sapthasaram Kashayam, Guda, Kana, Patu, Hingu, Ajyam, etc are mentioned to use along with according to the condition[3]. Likewise, honey for Dasamulaktutrayam Kashayam[4]. To the question about the usage of such anupanas for kashaya, the majority of the Survey Participants responded as they are using those anupanas.

As for the dose of kashaya, according to Acharya Sushruta, it is 1 Anjali (4 Pala)[5], and Acharya Sharangdhara is 2 pala [6]. Two Palam can be considered as 96ml and it will be for freshly prepared kashaya. The dose for bottled kashaya and also kashaya made out of sookshma churna may be different. So there can be confusion regarding the posology of kashaya. The majority of the participants are prescribing 15ml kashaya as a single dose and next comes 60ml and 20ml.

Arishta: Arishta and Asava are self-generated herbal fermentations where the fermentation is brought about by the addition of a source of sugar with Dhataki flowers. Asava formulations are prepared without making decoctions and Arishta formulations are prepared with decoctions. The method of preparation of Arishta and Asava is known as Sandhana Kalpana in Ayurveda[7].

Abhayarishtam, Amrutharishtam, and Asokarishtam are the first choices of Practitioners who attended the survey. Other than the options, more than 20 arista and asavas were mentioned other than those 10 options. Saraswatharishtam, Chandanasavam, Nimbamruthasavam, Roheetakarishtam, Dhanwanthararishtam, Moolakasavam, Ayaskriti, etc are some of them.

The mixing of Arishta in Kashaya is practiced by some of the doctors. It may be done to improve the absorption or to enhance palatability. This is mainly done in pediatric cases where children are not willing to take kashaya due to its kashaya rasa. But the majority of the doctors who participated in this survey are not mixing Arishta with Kashaya.

Combining two or three Arishta is done in many conditions. Combinations like Dasamoolarishtam, Vasarishtam, and Kanakasavam; Draksharishtam and Lohasavam; Asokarishtam and Kumaryasavam, etc are widely seen. This type of mixing of different Arishta is generally practiced by the clinicians. The survey report also supports this fact. 90% of the participants are prescribing combinations of Arishta while few are not practicing this method.

Acharya Sharangadhara has mentioned the dose of Arishta as one Pala which is equivalent to 48ml[8]. From the survey conducted, the majority of participants prescribe 25ml of Arishta as a single dose. The posology, analyzed from this survey ranges from 2 ml to 100ml. Many have mentioned the dose and age-dependent and also depending on the condition of the patient. Some mentioned adult doses as 25ml and child dose as 5-10ml. Some are prescribing Arishta mixed with water.

Gulika: Gulika is a pharmaceutical preparation in which the powder of raw drugs (Herbal or Herbo-minerals) triturated together with certain Kasayam or Juice or even honey and the medicines are prepared in the form of pills or tablets[9].

Chandraprabha Gulika, Dhanwantharam Gulika, Vilwadi Gulika, Yogaraja Guggulu, and Kaisora Guggulu are the most commonly used Gulika preparations among the practitioners who participated in this Survey. Gulika other than mentioned in the options like Vettumaran Gulika, Gopichandanadi, Gorochanadi, Tryodasanga Guggulu, Sudarsana Gulika, Arogyavardhini, Dooshivishari Gulika, etc are mentioned. A total of 29 gulika are mentioned as commonly used.

Many gulikas have specially mentioned anupanas to administer with. For example, Dhanwantharam Gulika should be taken with kashaya of jeeraka, panasacchada, bhunimba, etc[10], vettumaran Gulika has specific Anupana for different diseases like it should be taken with ardraka swarasa for fever, with jeeraka kashaya for vayukshoba, etc[11]. Siva Gulika, Manasamitravataka, Antrakutaram gulika are some other examples of such gulikas which have specific anupanas mentioned to take along with. According to the majority of participants of this survey, they use the Anupana for the Gulika as suggested by the literature.

As per the reference from Sharangadhara Samhitha, the dose of Gutika/Vatika is 12 grams[12]. The market available tablets are of different weight. For example, the tablets like Chandra Prabha gulika weigh 900mg, vettumaran gulika measures 120mg. So it will be difficult to fix the dosage. According to the survey, the majority of the practitioners are giving one tablet at a time irrespective of the weight of the tablet followed by two tablets. It has a range of ¼ tablets to 6 tablets. Some have mentioned according to weight and it ranges from 125mg to 1gram. Many have mentioned it as according to age, disease condition, etc. However, it doesn't match the prescribed dose mentioned in classics.

Tailam: Tailas are those preparations in which oil is boiled with prescribed kashaya (decoction) and kalkas of drugs which ensures absorption of the active therapeutic properties of the ingredients. It is one of the four Sneha Kalpana[13].

Taila application is beneficial not only for those suffering from diseases but also for healthy people. It should be applied daily to the body especially the head, ears, and feet. Apart from healing the

disease, it bestows good vision, nourishment to the body, good sleep, strong and lustrous skin, and wards off old age[14].

There are more than 100 Taila preparations mentioned in our classics. It is a comfort that the pharmaceutical companies are manufacturing a good number of classical preparations and are available in the market.

Dhanwantaram Tailam, Murivenna, Kottamchukkadi tailam, Sahacharadi Tailam, and Pinda tailam are on the top of the list of choices. Sathahwadi kuzhambu, Tungadrumadi taila, Uthama tail, Supthi tailam, chembarathyadi taila, malathyadi Kera, etc are some of the many tailas mentioned other than those in options.

Mixing of Taila is done in various conditions. For example, Dhanwanthara taila is seen mixed with Mahanarayana taila, kottamchukkadi taila with sahacharadi taila. Karpuradi taila is mused for mixing with different tailas to enhance the penetration. The majority of the Practitioners mix different Taila according to the survey.

Gritha: Ghrita Kalpana may be defined as a process, where various things like Ghrita, Kalka, Kwatha Ksheera, and Gandha dravyas are employed for the preparation of oleaginous medicaments[15]. Fat/water-soluble active principles of drugs are extracted into Ghrita in this method. During the preparation, extra benefits of Ghrita are added in formulations as their qualities are also mixed in drugs. To prepare any medicated ghrita, Kalka dravya (paste of herbs), ghee/oil, and Drava (liquid) is to be mixed & heat by mandagani. Then it is filtered and stored. Formulations prepared from the Ghrita enhance life, complexion, strength, and anabolism of the body.

There are more than 150 Gritha preparations mentioned in our classics. But only a few less than 50 Gritha are available in the market. From that, the practitioners are prescribing a very little number of formulations. The most commonly used Gritha by the practitioners attended the survey are Indukantha Gritha, Guggulu Tikthaka Gritha, Dadimadi Gritha, Sukumara Gritha, etc.

Most of the Gritha mentioned in literature does not have specific Anupana. Hot water is considered as a general Anupana. Only a few exceptions are mentioned like cold water for Gritha containing Bhallataka and Tuvataka. According to the survey, the majority of the participants prescribe Anupana as described in Ayurvedic literature.

The mixing of Churna in Gritha is not widely practiced. Mineral preparations are often seen prescribed by mixing with Gritha. It can be plain Gritha or medicated ones. More than half of the participants of the survey are not mixing Churna while others are mixing them.

Regarding the dose of Gritha, Acharya Sharangadhara has mentioned as One Pala which weighs nearly 48ml[16]. According to the survey, the majority of practitioners prescribe 5ml of Gritha as a single dose and then comes 10ml, 15ml, etc. the range of Gritha dose varies from 5ml to 50ml. This variation may be because Gritha administration is always done after assessing the Agni and the dose is gradually increased.

Churna: Churna is a mixture of powdered herbs with or without minerals that are used in Ayurvedic medicines[17]. For example, Triphala Churna is a combination of three drugs namely Hareetaki, Vibheetaki, and Amalaki which is useful in the end number of conditions[18]. It can be made with a single ingredient also. Like Manjishta Churna which is indicated for Vyanga.

DOCUMENTATION OF COMMONLY USED AYURVEDIC FORMULATIONS

More than 100 Churna are mentioned in Sahasrayogam and a lot more will be in the Samhitas and other works of literature. But not more than 50 churnas are available in the market. The most common Churna prescribed by the practitioners who attended the survey are Avipathi Churna, Ashta Churna, Hinguvachadi Churna, etc. Nalpamaradi Churna, Deepyakadi churna, Sitopaladi churna, Nagaradi Churna, etc are some of the Churna mentioned other than the options provided.

Specific Anupana has been mentioned for many Churna. For example, hot water, mamsa rasa, or gomutra are mentioned for Triphala Churna [19] and honey is mentioned for Avipathi Churna[20]. According to the survey, the majority of the participants prescribe Anupana for Churna as mentioned in Literature.

The prescribed dose of Churna as in Ayurvedic literature is one Karsha[21]. This is equivalent to 12 grams. Most of the practitioners who participated in the survey claimed to prescribe Churna in a dose of 5g followed by 10, 3.5, and 12 grams. The range of dose varies from 3gm to 15gm.

Lehya: Lehya is a semisolid preparation of herbal drugs prepared in decoction or extracts of different herbs by adding sweetening agents like jaggery, sugar, or sugar candy along with lipid medium like ghee [22]. Lehya is having popularity due to its easy administration, palatability, and longer shelf life.

Even though there are many lehyas, around 50 lehyas are available in the market and are used extensively by the practitioners. According to the survey, the commonly prescribed Lehyam are Agasthya Rasayana, Haridrakandam, Dasamulaharitaki Lehyam, etc. Apart from the options, Brahma Rasayana, Sukumara Lehya, Panchajeeraka Gudam, etc was also additionally added by the participants.

Many lehyas are having prescribed Anupana. For example, after consuming kutjavalehya, milk or buttermilk should be consumed [23]. Another example is the consumption of Chinchadi Lehyam. It is advised to administer along with honey or buttermilk [24]. According to the survey, the majority of the participants are prescribing Anupana for Lehya as prescribed by Acharyas.

The dose of Lehya mentioned in Sharangadhara Samhitha is one Pala [25] that is 48grams. According to the survey, the commonly prescribed dose of Lehya is 5 grams followed by 10 grams and 15 grams. The range of Lehya dose varies from 5grams to 50 grams.

CONCLUSION

Lack of experience in using has drastically narrowed the list of kashaya, aristas, and other formulations. Hence proper documentation regarding those ignored yogas and their efficacy can revive the great ancient knowledge. Measures should be adopted to promote the usage of unexploited formulations. To begin with, formulations with fewer ingredients should be identified. For example, Kutajadi kashaya, which is mentioned for Atisara is having three ingredients viz Kutaja twak, Kutaja Phalam, and Musta [26]. These formulations will be simple to manufacture as well as the efficacy tests of them will be easy.

The dose is the appropriate quantity of medicine needed to produce a certain degree of response. Ayurveda acharyas advise a thorough evaluation of various aspects like Dosa, Dushya, Desa, Kala, Bala, Prakruti, and the like before fixing the dose[27]. If the medicine is administered by assessing all the prescribed points, then it will give the desired result quickly. Even though our Acharyas have mentioned specific doses for each formulation, today's practitioners are not following it appropriately. Hence identification of an optimum dose is a necessity. This will help to prevent overdosage and also long term intake of medicines. If the production is limited to the demand, it will obliquely be helping in the preservation of medicinal plants. Also, it will indirectly assist in reducing the wastage of

medicines, thereby protecting the environment. Studies need to be conducted in regards to the optimum dose of each formulation and its prescription.

Anupana is any liquid that is consumed after the ingestion of medicines. Just like an oil drop spreads rapidly over water, anupana helps the drug to reach the organs swiftly. Anupana taken after food should have contrasting qualities to the food and similar qualities to the Dhatus[29]. Anupana gives strength and imparts stability to the body[30]. It brings out complete action of the food or medicine. If proper anupana is taken, it nourishes the body and promotes the life span³⁰. Hence the knowledge and practice of Anupana have to be promoted. It increases the bioavailability of medicine and also helps in potentiating them. It may be altering the drug metabolism and thus providing a sustained effect of that medicine. Understanding the effect of prescribed anupana and their judicious use will be a great benefit and hence should be promoted.

New drug forms should be designed considering convenience and palatability without compromising the effect. Many Kashayas are available in tablet, capsule, and syrup form that have a good result. Medicines like Rasaushadis and Bhasmas are taken in small doses and are difficult to measure and administer. If they are made in Capsules, then it will be very convenient for use. Usage of Taila also poses certain inconveniences while application, handling packaging, and transportation. The great difficulty is its sticky nature, and when applied over the skin, it leaves a stain on the applied area and also on the cloth. All this creates a need for better and improved therapeutic applications as various dosage forms. It will be a great initiative if a new dosage form of Taila as an ointment, gel, or cream is developed. Similarly, Churna can be converted into a firm and palatable granules by using methods like dry granulation and other formulation strategies.

Currently, all these new forms are available only in few numbers and because they are both effective and convenient, it should be encouraged. Detail evaluation on the grounds of phytochemical, physicochemical, safety, efficacy, and dosage of the new product forms and its conventional prepared forms are very much necessary. Hence research works should be initiated in all these domains to promote the usage of Ayurvedic formulations and resultantly broaden the popularity of Ayurveda.

Acknowledgment

We wholeheartedly acknowledge the continuous support and encouragement given by the Hon. Vice-Chancellor, Prof.(Dr.) Mohanan Kunnummal, and Registrar, Dr. A.K Manoj Kumar, of Kerala University of Health Sciences for this study and also for all the endeavors taken up by the School of Fundamental Research in Ayurveda

REFERENCES:

- [1] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p106
- [2] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.
- [3] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.p92
- [4] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.p63
- [5] Singhal, G.D. Susrutha Samhitha- Ancient Indian Surgery. (1st ed.). Delhi: Choukhamba Sanskrit Pratishtan; 2015.p325
- [6] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p107
- [7] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p225
- [8] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p225
- [9] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p172
- [10] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.p135

DOCUMENTATION OF COMMONLY USED AYURVEDIC FORMULATIONS

- [11] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.p147
- [12] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p172
- [13] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p208
- [14] Srikantha murthy, K.R. Vagbhata's Astanga Hridayam. (27 ed.). Varanasi: Chowkhamba Krishnadas Academy; 2003.Sutra sthana. p24
- [15] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p194
- [16] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p194
- [17] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p147
- [18] Singhal, G.D. Susrutha Samhitha- Ancient Indian Surgery. (1st ed.). Delhi: Choukhamba Sanskrit Pratishthan; 2015.p
- [19] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.p175
- [20] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.p165
- [21] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p147
- [22] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p187
- [23] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.p210
- [24] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.p218
- [25] Achyutavariyar, K. Sharangadhara Samhitha. (4 ed.). Kollam: S T Reddyar & Sons.p187
- [26] Krishnan vaidyan, K.V, Gopala pilla, S. Sahasrayogam. (27 ed.). Alappuzha: Vidyarambham publications; 2007.p45
- [27] Srikantha murthy, K.R. Vagbhata's Astanga Hridayam. (27 ed.). Varanasi: Chowkhamba Krishnadas Academy; 2003.p179
- [28] Priyavrat sharma. Caraka Samhitha. (9 ed.). Varanasi: Chowkhamba Orientalia; 2004. Sutra sthana. p222
- [29] Srikantha murthy, K.R. Vagbhata's Astanga Hridayam. (27 ed.). Varanasi: Chowkhamba Krishnadas Academy; 2003. Sutra sthana. p133
- [30] Priyavrat sharma. Caraka Samhitha. (9 ed.). Varanasi: Chowkhamba Orientalia; 2004. Sutra sthana. p223