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A pharmaceutico-analytical study of *Vidangarishta*

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ABSTRACT

In Ayurveda, *Sandhana Kalpana* is particular dosage form. In *Sandhana Kalpana, Asava* and *Arishta* are included. *Arishta* are self generated herbal fermentation formulation in traditional medicinal system; they are considered as unique and valuable therapeutics in Ayurveda. Through traditional knowledge in literature as well as in practice exists about *Arishtas* and *Asavas*. There was great efforts to document, preserve and improve knowledge for the betterment of mankind**.** *Vidangarishta* is prepared by traditional method with special reference to *Sharangdhara Samhita*. This is alcoholic medicaments prepared by allowing the decoction to undergoes fermentation with addition of honey. *Vidangarishta* keep for fermentation about one month. After fermentation process is completed, was tested according to both Ayurvedic and modern method. *Vidangarishta* commonly used for *Krumi* (worm infection) *Vyadhi*. Pharmaceutical and analytical study discussed in this research article.

Key words: *Vidangarishta, Arishta, Krumi, Vidanga, Fermentation, Anaytical.*

INTRODUCTION

Ayurveda is a traditional Indian medicinal system which is practiced since thousands of years. Ayurvedic treatment has been estimated to meet 70-80% of the health care needs of India. Ayurvedic medicines are of various types, they are herbal decoction, juice, powder, oils, tablets, creams along with *Asava* and *Arishta*. *Asava* and *Arishta* are considered as unique and valuable therapeutics in Ayurveda.

Asava and *Arishta* are made by fermentation process both acidic and alcoholic fermentation. Alcohol has its own properties and enhance the drugs properties along with it. Alcohol spreads faster in body, so ancient people made alcohol as carrier for drug. This preparation have self generated alcohol within healthy limit. These *Asava-Arishtas* have several advantages like better keeping quality, improvement in the efficiency of extraction of drug molecules from the herbs and improvement in drug delivery in to the human body sites. The *Asava-Arishtas* are classical Ayurvedic pharmaceutical dosage forms that are easy to use and are frequently prescribed owing to better palatability, accelerated therapeutic action enhanced efficacy in the treatment of several disease and due to its long shelf life.

Vidangarishta is one of the commonly used *Arishta Kalpana*. *Vidangarishta* are mainly useful in *Krumivyadhi* (worm infection) and other *Vyadhi* like *Urustambha, Vatvyadhi, Ashmari* (kidney stone), *Prameha* (diabetes mellitus), *Vidradhi* (abscess), *Bhagandara* (fistula). So we preparing *Vidangarishta* by traditional method and pharmaceutico-analytical study is done.

Ingrediant present in *Vidangarishta* are mainly *Ruksha, Ushna, Teekshna* and *Vata-Kapha Dushtinashak. Vidangarishta* is effective in *Krumi* by pacifying *Amashaya*. Appropriate consumption of *Vidangarishta* helps in enhancing reccurance of *Krumi*. It also helps in enhancing *Jatharagni*.

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AIM

To do pharmaceutico-analytical study of *Vidangarishta*.

OBJECTIVE

1. To prepare *Vidangarishta*[1] by traditional method with special reference to *Sharangdhar Samhita Madhyamkhanda* 10\49-54.
2. To do pharmaceutico-analytical test of *Vidangarishta* by Ayurvedic and modern parameter .

MATERIALS AND METHODS

Equipments

Stainless steel vessel, spoon, Stainless steel jar, Gas and burner, Cloth for filteration, Packing material, Multani mitti.

Standardization of raw drug

All raw drugs purchased from local market. All physical and chemical test are done in our laboratory. All values are compared with standard values of API.

Preparation of *Vidangarishta* by traditional methods

All *Kwatha Dravya* boiled in 96 liters of water and reduced to quarter. The reduced liquid (*Kwatha*) was filtered into another clean wide mouthed stainless steel vessel. After the filterate cool down, the honey was added and stirred. *Dhupna* of the *Sandhanpatra* (Stainless steel jar) was carried out by *Dhupanadravya*. These honey mixed *Kwatha* was poured into the stainless steel jar and added dry *Dhatakipushpa* on it.Then all *Prakshepa Dravya* added in it.The mixture was continuously stirred and the vessels was kept in dark room by temporarily closing its mouth with a cloth and *Multani Mitti.* After one month fermentation process was completed, then *Matkapada* of jar was removed. *Vidangarishta* was filtered by cloth and kept in another vessel.

Candle test- Burning candle burns brightly when placed in or just above the *Sandhana Patra*. It was test for confirmation of fermentation process of arishta was completed.

All raw drugs were brought from local market as follows,

Table 1: *Kwatha Dravya*[2]

SN	Drug name	Latin name	Quantity
1.	*Vidanga*	*Embeliaribes*	250gm
2.	*Pippalimoola*	*Piper longum*	250gm
3.	*Rasna*	*Pluchealanceolala*	250gm
4.	*Kutajatwaka*	*Holarrhenaantidysenterica*	250gm
5.	*Kutajaphala*	*Holarrhenaantidysenterica*	250gm
6.	*Patha*	*Cissampelospareira Linn*	250gm
7.	*Dhatri*	*Embelicaofficinalis*	250gm
8.	*Jala*	-	96 liters (reduce to 12 liters)

Table 2: *Prakshepa Dravya*[2]

SN	Drug name	Latin name	Quantity
1.	*Twak*	*Cinnamomumzeylanicum*	31gm
2.	*Ela*	*Electariacardamomum*	31gm
3.	*Tamalpatra*	*Cinnamomumtamala*	31gm
4.	*Priyangu*	*Callicarpamacrophylla*	46gm
5.	*Kanchnar*	*Bauhinia variegate*	46gm
6.	*Lodhra*	*Symplocosracemosa*	46gm
7.	*Shunthi*	*Zinziberofficinale*	106gm
8.	*Marich*	*Piper nigrum*	106gm
9.	*Pippali*	*Piper longum*	106gm

Table 3: *Sandhana Dravya*

SN	Drug name	Latin name	Quantity
1.	Dhatakipushpa	*Woodfordiafruticosa*	950gm

Table 4: *Madhura Dravya*

SN	Drug name	English name	Quantity
1.	*Madhu*	Honey	14Kg

ISSN: 2456-3110 ORIGINAL ARTICLE Sept-Oct 2019

Fig. 1: Raw drug of *Vidangarishta*

Fig. 2: *Kwatha Dravya*

Fig. 3: *Kwatha* preparation

Fig. 4: *Kwatha*

Fig. 5: Mixing of *Prakshepa Dravya*

Fig. 6: Candle test

Fig. 7: *Vidangarishta*

ISSN: 2456-3110 ORIGINAL ARTICLE Sept-Oct 2019

OBSERVATIONS AND RESULTS

Ash value[5]

Incinerate about 2gm accurately weighed of the ground drug in tared silica crucible at a temperature not exceeding 450° C until it convert into white colour ash, cool and weight

Loss on drying

Place about 10gm of drug after accurately weighing it in a tared evapourating dish. After placing the above said amount of the drying in a tared evaporating dish dry at 105° C for 5 hours and weigh. Continue the drying and weighing at one hours interval until difference between two successive weighings corresponds to not more than 0.25%. Constant weight is reached when two consecutive weighings after drying for 30 minutes and cooling for 30 minutes in a dessicator, show not more than 0.01 gm difference.

Alcohol soluble extractive

Macerate 5gm of the air dried drug with 100 ml of alcohol of specified strength in a closed flask for 24 hrs, shaking frequently during 6 hrs and allowing to stand for 18 hrs. Evaporate 25 ml of filterate to dryness in a tared flat bottomed shallow dish and dry at 105° C to constant weight and weigh. Calculate the % of alcohol soluble extractive with reference to the air dried drug.

Water soluble extractive

Proceed as directed for the determination of alcohol soluble extractive, using chloroform water instead of ethanol.

pH value

pH meter was used to check the pH of the formulation that caliberate prior to use.

Total solid content

50 ml of formulation was taken in petri dish which was previously weighed and allowed to evaporate. So that only solid content remains in the dish and rest of the fluid gets evaporated. Then it was weighed again and the solid content of formulation calculated.

Viscosity

Viscosity of the formulation was determined using Oswald viscometer.

Specific gravity

Select a thoroughly clean and dry pycnometer.Caliberate the pycnometer by filling it with recently boiled and cooled water at 25° C and weighing the contents. Assuming that the weight of 1ml of water at 25°C when weighed in air of density 0.0012g per ml, is 0.99602g. Calculate the capacity of pycnometer. Adjust the temperature of the substance to be examined to about 20°C and fill the pycnometer with it. Adjust the temperature of the filled pycnometer to 25°C, remove any excess of the substance and weigh. Substract the tare weight of the pycnometer from the filled weight of the pycnometer. Determine the weight per milliliter dividing the weight in air, expressed in g, of the quantity of liquid which fills the pycnometer at the specified temperature,by the capacity expressed in ml, of the pycnometer at the same temperature.

Table 5: Raw drug standardization

Drug name	Loss on drying in %	Total ash in %	pH	Colour of extraction
Vidanga	9.4	3.5	5.07	Light brown
Pippali Moola	6.59	7	5.55	Dark greenish
Kutaja Twak	4.39	7	5.22	Light orange
Kutaja Phala	4.40	7.5	6.48	Pale yellow
Patha	6.51	3	5.29	Dark brown
Amalaki	4.7	0.082	3.44	Redish brown
Ela	9.39	4	6.05	Light greenish
Twak	6.50	3	4	Light orange
Tamalpatra	6.6	4.4	5.19	Light yellow
Priyangu	4	6	5.14	Very light

ISSN: 2456-3110 ORIGINAL ARTICLE Sept-Oct 2019

				yellow
Kanchnar	7.4	10.3	5.47	Dark yellow
Lodhra	9.9	11.5	5.35	Light brown
Shunthi	7.31	5.5	5.05	Dark yellow
Marich	9	5	7.03	Dark Brownish
Pippali	6.59	7	5.55	Dark Brownish

Table 6: Raw drug standardization

Drug name	Extractive		Thin layer chromatography	
	Water	Alcohol	Water	Alcohol
Vidanga	11.2	10.4	0.37	0.22,0.56
Pippali Moola	36.5	12.4	0.16,0.21	0.08,0.10,0.21,0.28,0.37
Kutaja Twak	20.02	18.6	0.82	0.08,0.35
Kutaja Phala	16.8	12.4	0.55	0.83
Patha	14.4	12.5	6.09,0.12, 0.14,0.18	0.14,0.20,0.24,0.28,0.32
Amalaki	54	57.49	0.43,0.056	0.018,0.84, 0.66
Ela	14.6	5.4	0.20	0.10,0.14,0.20,0.28,0.32
Twak	11	13.4	0.51	0.31,0.52,0.60,0.68
Tamalpatra	9.8	7.1	0.21,0.28	0.34,0.38,0.45,0.49
Priyangu	14.5	11.2	0.35,0.40	0.21,0.26,0.32,0.37,0.41
Kanchnar	6.8	2.4	0.32,0.34,0.38	0.51,0.55,0.58,0.62
Lodhra	33.8	4.4	0.09	0.12,0.16,0.19,0.25,0.33
Shunthi	12.8	3.2	0.21,0.35,0.42,0.48	0.35,0.47,0.54
Marich	11.4	7.6	0.25,0.36	0.44,0.51,0.61
Pippali	36.5	12.4	0.16,0.54	0.43,0.47,0.52,0.56,0.61

Table 7: *Arishta Siddhi Lakshana*[4]

SN	Test name	Response
1.	Burning candle test	Continue burn
2.	Hissing sound	No
3.	Effervescence	No
4.	*Prakshepa Dravya*	Sunk to bottom
5.	Appearance	Clear

Table 8: Organoleptic test

Roopa	Dark brown
Rasa	*Katu-Tikta*
Gandha	Strong alcoholic

Table 9: Physicochemical test

SN	Test name	Value
1.	pH	3.90
2.	Specific gravity	1.135g\ml
3.	Density	1.1948gm\ml
4.	Refractive index	1.3896
5.	Total solid content	66.20%
6.	Viscosity	2.3134
7.	Alcohol content	9.0%

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8.	Sugar percentage	26.0%
9.	Reducing sugar	
	a. Fehlings test	+++Present
	b. Benedict test	+++Present

Vidangarishta was prepared by traditional medhod. After preparation of *Vidangarishta* it was tested according to both Ayurvedic and modern method.

Before pouring of *Kwatha* in jar *Dhupana Samskara* was done with *Kapura, Chandan, Guggulu, Ral, Nimba Patra.* All *Dravyas* having *Krumighna* properties. It was important in *Sandhana Kalpana* to avoid any contamination during fermentation process.

In *Vidangarishta* 12 liter *Kwatha*, 14 kg honey and all *Prakshep Dravya* in given quantity is added, total quantity of *Vidangarishta* is obtained to be 14.3 litres.

Discussion

In *Vidangarishta* only honey was added in double quantity according to reference. Honey contains 92% of levulose (fructose) and dextrose (glucose), water and 8% is various sugar. Honey contains mainly two types of sugar, so it helps to fermentation process in *Arishta* was good. It provide nutrition to yeast so that fermentation process was fast in *Arishta*. Therefore important role of honey in fermentation process. Honey was added in *Arishta* as sweetener agent. Honey was masking the test of *Arishta* and it was palatable in children also.

Dhataki Pushpa having property of natural fermentation initiator. *Dhataki Pushpa* combines with honey and it started fermentation of *Arishta*. Dry *Dhataki Pushpa* contains more yeast colonies. It was more helpfull in fermentation process. *Sandhana Kalpana* was based on fermentation process. *Dhataki Pushpa* was more effective in this *Arishta*.

In *Sandhana Kalpana, Dhupana Samskar* was mention in *Samhitas*. Before pouring of *Kwatha* in jar *Dhupana Samskara* was done with *Kapura, Chandan, Guggulu, Ral, Nimba Patra*. All *Dravyas* having *Sugandhi Dravya* and *Krumighna* properties. It has important to avoid any contamination in preparing *Arishta*. *Dhupana Dravya* will kill all micro-oranagnism in a jar. So that no any contamination during the preparation of *Arishta*.

Conclusion

The work done cautiously to avoid spoilage of *Vidanga Arishta*. Stainless steel jar was clean properly, *Dhupana Samskara* was done. After cooling of decoction honey was added and mix it well. For fermentation process about one month jar was put in dark place. These all precaution was taken then *Arishta* was prepared nicely having more efficacy. *Vidanga Arishta* was prepared by traditional method. All pharmaceutico-analyitcal test was compared with standard value of *Arishta* values. All values was between range. So according to text pharmaceutical process done.

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