

EVALUATION OF STYPTIC ACTION OF PATHYAMALAKYADI KASHAYA IN MANAGEMENT OF ASRIGDARA W.S.R. DYSFUNCTIONAL UTERINE BLEEDING

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ABSTRACT

The word *Asrigdara* explains prolonged and excessive bleeding, including bleeding during the intermenstrual period. According to *Caraka*, due to *Pradirana* (excessive excretion) of *Raja* (menstrual blood), it is named *Pradara*, and since there is *Dirana* (excessive excretion) of *Asrk* (menstrual blood), it is known as *Asrigdara*. Dysfunctional uterine bleeding (DUB) is defined as abnormal uterine bleeding without any clinically detectable organic, systemic, iatrogenic cause, or pregnancy, which can be considered as *Asrigdara*. Currently, DUB is a state of abnormal uterine bleeding following anovulation due to dysfunction of the hypothalamopituitary ovarian axis (endocrine origin). Treatment modalities, *Shamana* and *Shodana Chikitsa*, control the bleeding. Drugs with *Kashaya*, *Tikta Rasa* and *Sheeta Veerya* help in vasoconstriction and bring haemostasis. Hence, *Pathyamalakyadi Kashaya* having *Kashaya*, *Tikta Rasa*, and *Sheeta Veerya* is included in the study.

KEYWORDS: *Asrigdara*, *Pathyamalakyadi Kashaya*, Dysfunctional Uterine Bleeding, *Asrigdara*, *Pradirana*, *Menstrual Blood*, *Pradara*, *Vasoconstriction*, *Haemostasis*.

INTRODUCTION

An abnormal menstrual cycle not only disturbs the general health, it also disturbs routine work schedule of the woman and her entire family. In addition to this it also causes financial burden. Dysfunctional uterine bleeding is defined as a state of abnormal uterine bleeding without any clinically detectable organic, systemic and iatrogenic cause.^[1] A normal menstruation denotes a healthy state of female reproductive system, if the menstrual bleeding is abnormally excessive, prolonged and is associated with pain, it indicates some underlying pathology. The severity of pathology may vary from simple hormonal imbalance to dreaded genital malignancy. Various reports suggest that 30 to 50% of women in their reproductive age group suffer from excessive and irregular uterine bleeding by various causative factors. 28% of the female population consider their menstruation excessive and will plan their social activities around their menstrual cycle, and nearly 10% of employed women will need to take time off from their work because of excessive menstrual loss.^[3] 6 % of women aged between 25 to 44 years consult their General practitioner's about excessive menstrual loss every year.^[4] Out of them 35 % referred to hospital.^[5] 60 %

will have a hysterectomy in the next 5 years.^[6] Over 75000 hysterectomies are now carried out every year with 30 % of them carried out for menstrual disturbances alone.^[7]

The word *Asrigdara* explains prolonged and excessive bleeding in Ayurvedic classics. According to *Caraka*, due to *Pradirana* (excessive excretion) of *Raja* (menstrual blood), it is named *Pradara*, and since there is *Dirana* (excessive excretion) of *Asrk* (menstrual blood), it is known as *Asrigdara*. *Asrigdara* is a life-threatening disease and should be treated very seriously. If not treated early, *Asrigdara* leads to complications such as *Dourbhalya*, *Brama*, *Murcha*, *Tama*, *Thrsna*, *Daha*, *Pralap*, *Pandu*, *Tandra*, and *Vataja* rogas.^[8] The medical and surgical management of DUB in contemporary science often fails to give satisfactory results and causes patients to suffer from the ill effects or adverse effects of treatment. Hence, an effective management strategy is urgently needed. Several formulations are mentioned in classical Ayurvedic texts for the management of *Asrigdara*. In light of the above, it may be worthwhile to explore the potential of *Pathyamalakyadi Kashaya* in the management of

Asrigdara. Pathyamalakyadi Kashaya is mentioned in *Sahasrayoga* and indicated in *Sarva Pradara*.^[9] As *Pathyamalakyadi Kashaya* has *Tikta Kashaya Rasa*, *Sheeta Ushna Veerya* and is said to have *Kapha Pitta* and *Vatahara* and *Vedanasthapana*, *Stambhana* actions, this study aims to evaluate the styptic action of *Pathyamalakyadi Kashaya* in the management of *Asrigdara* with special reference to dysfunctional uterine bleeding.

OBJECTIVE

To evaluate the effect of *Pathyamalakyadi Kashaya* in the management of *Asrigdara*.

MATERIALS AND METHODS

Source of data

Samples for the study was taken from OPD and IPD, Department of of *Prasuti Tantra And Stri Roga* Shri Dharamsthala Manjunatheshwara College of Ayurveda and Hospital, Hassan.

Method of collection of data

• Plan of study

20 patients fulfilling the inclusive criteria and exclusive criteria were selected. A detailed case proforma was prepared considering all points of history taking, physical examination, lab investigation. The parameters of signs & symptoms, before treatment & after treatment were scored and analyzed on the basis of standard method of statistical analysis.

DIAGNOSTIC CRITERIA

- Diagnosis was made on the basis of symptoms of *Asrigdara*.
- Menstrual bleeding more than 5 days.
- Patient using more than completely soaked 3 pads per day (Patients were instructed to use pads of same company).
- Inter menstrual bleeding less than 21 days atleast for 2 cycles.
- Irrespective of parity

INCLUSION CRITERIA

- Patients aged between 16-50 years.
- Patients ready to sign the informed consent form.
- Patients presenting with excessive, prolonged menstrual bleeding, intermenstrual bleeding at least for two months.

EXCLUSION CRITERIA

- Uterine polyp/Endometrial poly/endo cervical polyp.
- Carcinoma of cervix.
- Patient using intrauterine contraceptive device.
- Coagulation disorders.
- Thyroid problems
- Ischemic heart disease.
- Threatened, spontaneous or incomplete abortion / Ectopic pregnancy.
- Diabetes Mellitus/Tuberculosis/Renal failure
- Patients with uterine and pelvic pathology. (Fibroid, Adenomyosis)
- Benign and Malignant growth.

Groups	<i>Pathyamalakyadi Kashaya</i>
Subjects	20
Dosage	30 ml twice daily before food
Anupama	Sukhoshna jala
Duration	60 days
Follow up	The subjects were followed up for once in 15 days during the course of treatment

Preparation of *Pathyamalakyadi Kashaya*

Ingredients: *Amalaki Haritaki Vibhitaki Haridra Devadaru Shunti Lodhra* Water.

Identification and Quality Control of Drugs

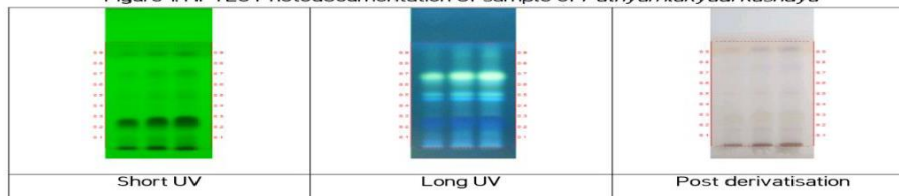
The raw material were subject to various tests for authentication and quality assessment.



TEST REPORT												
Date: 08-March-2018												
Sl. No.	Material	Parts of plants	Sanskrit Name	Botanical Name	Ash	Appearance	Colour	Odour	Taste	Sign of TS	Sign of MO	Remarks
1	kadukkathodu	Fruit	Hareethaki	Terminalia chebula	11%	Dry	Brown	Charact-eristic	Charact-eristic	✓	✓	The sample value found to be standard
2	Thannikathodu	Seed coat	Vibheethaki	Terminalia bellarica	5.60%	Dry	Brown	Charact-eristic	Charact-eristic	✓	✓	The sample value found to be standard
3	Nellikathodu	Fruit bulk	Amalaki	Phyllanthus emblica	8%	Dry	Black	Charact-eristic	Charact-eristic	✓	✓	The sample value found to be standard
4	Chukku	Rhizome	Shunti	Zingiber officinalis	7%	Dry	White	Charact-eristic	Charact-eristic	✓	✓	The sample value found to be standard
5	Pachotttholi	Stem bark	Lodhra	Symplocos racemosa	15%	Dry	Grey & Yellow	Charact-eristic	Charact-eristic	✓	✓	The sample value found to be standard
6	Devadharam	Heart-wood	Devadaru	Cedrus deodara	9%	Dry	Cream	Charact-eristic	Charact-eristic	✓	✓	The sample value found to be standard
7	Manjal	Rhizome	Haridra	Curcuma longa	6%	Dry	Yellow	Charact-eristic	Charact-eristic	✓	✓	The sample value found to be standard

Part C: Results
Table 1. Physico-chemical parameters

Parameters	Results n=3 %w/w
Refractive index	1.34082
Specific gravity	1.0239
Viscosity	6.0
Total solids	5.85

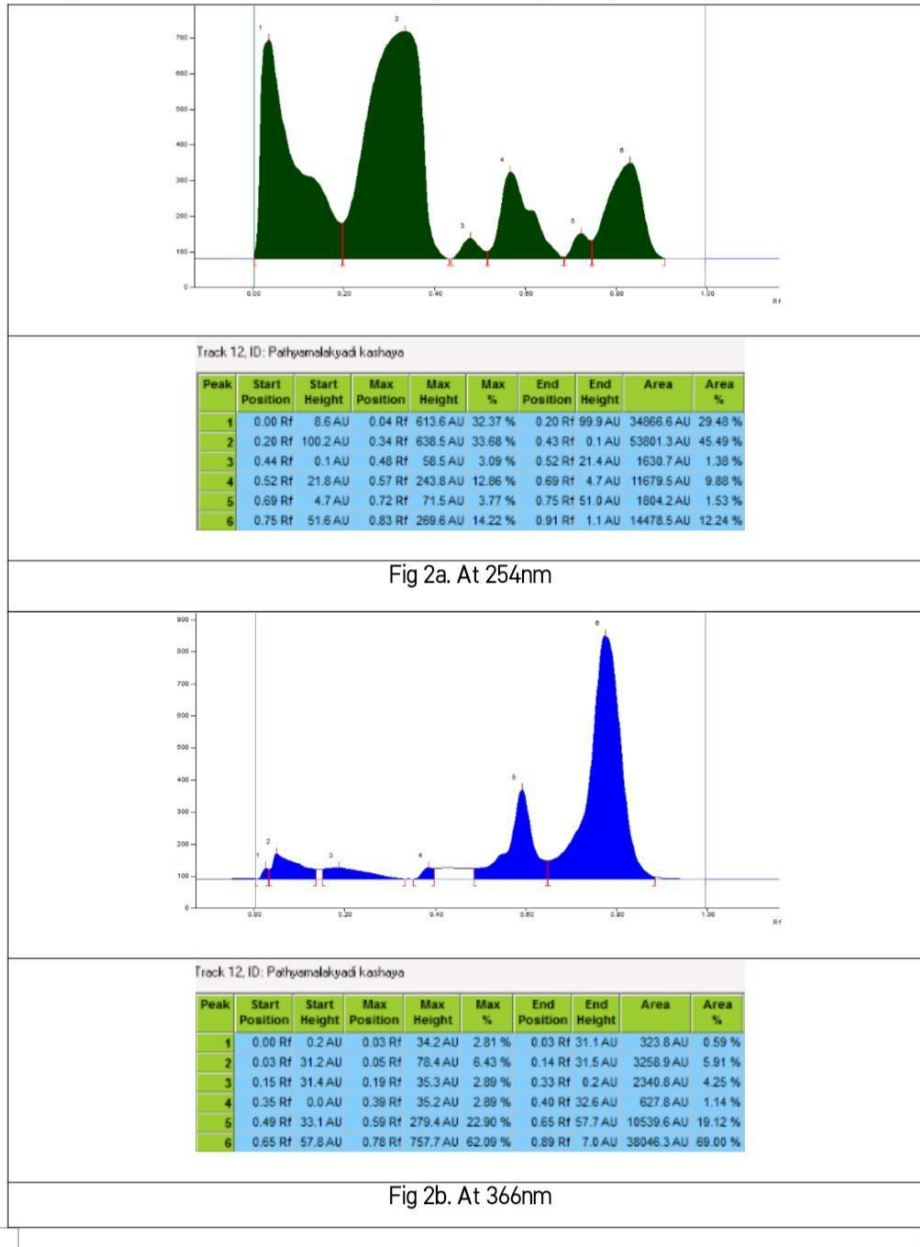
Figure 1: HPTLC Photodocumentation of sample of *Pathyamlakyadi kashaya*Track 1: *Pathyamlakyadi kashaya*- 3 μ lTrack 2: *Pathyamlakyadi kashaya*- 6 μ lTrack 3: *Pathyamlakyadi kashaya*- 9 μ l

Solvent system: Toluene: Ethyl acetate: Formic acid: Methanol (3:3: 0.8: 0.2)

Table 2: Rf values of sample of *Pathyamlakyadi kashaya*

Short UV	Long UV	Post derivatisation
		0.15 (L. purple)
0.26 (D. Green)	0.27 (F. blue)	0.27 (L. purple)
0.48 (L. Green)	0.47 (FL. blue)	
	0.51 (F. green)	0.51 (L. purple)
0.54 (L. Green)		
0.62 (L. Green)		
	0.68 (F. green)	
0.71 (L. Green)		
		0.75 (D. purple)
	0.81 (F. blue)	
0.90 (L. Green)	0.89 (F. blue)	
		0.93 (D. purple)

*L -light; F - fluorescent

Figure 2: Densitometric scan of the sample of *Pathyamalkyadi kashaya*

Method of Preparation

Amalaki, Haritaki, Vibhitaki, Shunti, Devadaru, Haridra, Lodhra, (each drug taken 1.5kgs) are made into coarse powder. To all the above ingredients 160 litres of water added and boiled and heated till it reduced to 1/4th 40 litres. sodium benzoate 0.5% is added as a preservative and added to *Kashaya* and then it dispensed in 200 ml bottles.

Packaging And Labeling

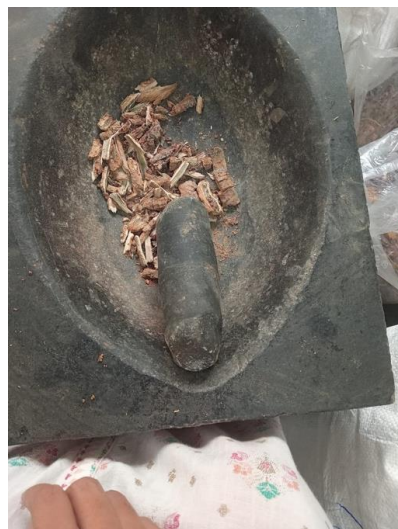
Air tight bottles of *Pathyamalkyadi Kashaya* was properly labeled with name of drug, ingredients, and details of manufacturer, quantity with expiry date.



Raw drugs- Ingredients of Pathyamalkyadi kashaya



Pounding of Haridra



Shunti Churna



Devadaru Churna



Lodhra Churna



Vibhitaki Churna



Preparation of Pathyamalakyadi Kashaya



Amalaki Churna



Haritaki Churna



Pathyamalakyadi Kashaya



Filtering of Pathyamalakyadi Kashaya



Adding of Sodium benzoate 0.5%



Packing and Labelling Kashaya Bottle



Packed Kashaya Bottles



Storage of Pathyamalakyadi Kashaya Bottles

ASSESSMENT CRITERIA

- The effect of therapies was assessed before and after treatment on the basis of subjective criteria
- Interval between cycles
- Duration of bleeding
- Amount of bleeding
- Consistency of bleeding- Presence of clots
- Colour of bleeding
- Intermenstrual bleeding
- Pain abdomen during menstruation.

Interval between cycles

- Grade 1 15-20 days
- Grade 2 21-30 days
- Grade 3 31-40 days
- Grade 4 >40 days.

Amount of bleeding

- Grade 0 1-2 pads / day
- Grade 1 3-4 pads/day
- Grade 2 5-6 pads/day
- Grade 3 7 & >7 pads/day.

Duration of flow

- Grade 0 3-5 days (normal)
- Grade 1 5-7 days (mild)
- Grade 2 7-10 days (moderate)
- Grade 3 10-15 days (severe) and more than 15 days.

Consistency of bleeding

- Grade 0 Absent
- Grade 1 Mild (2-3 clots per day)
- Grade 2 Moderate (4-5 clots per day)
- Grade 3 Severe (>5 clots per day).

Pain abdomen

- Grade 0 No pain
- Grade 1 Mild
- Grade 2 Moderate
- Grade 3 Severe.

RESULTS

Interval Between Cycles

The study found a significant reduction in the Interval Between Menstrual Cycles after treatment with *Pathyamalakyadi Kashaya*. The p-values were 0.008 from before treatment to the first follow-up and 0.003

from before treatment to after treatment, indicating the treatment's effectiveness.

Duration of Bleeding

Pathyamalakyadi Kashaya significantly reduced the Duration of Bleeding. The p-values were 0.000 from before treatment to the first follow-up, 0.005 from the first to the second follow-up, and 0.000 from before treatment to after treatment. This suggests that the treatment is effective in shortening the bleeding duration, likely due to its impact on Vata Dosha.

Amount of Bleeding

The treatment also effectively reduced the Amount of Menstrual Bleeding. The p-values were 0.003 from before treatment to the first follow-up, 0.005 from the second follow-up to after treatment, and 0.001 from before treatment to after treatment, confirming its efficacy.

Presence of Clots

Pathyamalakyadi Kashaya significantly reduced the Presence of Clots in the Menstrual Flow. The p-values were 0.034 from the second follow-up to after treatment and 0.000 from before treatment to after treatment, demonstrating its effectiveness in treating clot formation.

Abdominal Pain

The study showed that *Pathyamalakyadi Kashaya* was effective in alleviating Abdominal Pain associated with menstruation. The p-values were 0.004 from before treatment to the first follow-up, 0.034 from the second follow-up to after treatment, and 0.000 from before treatment to after treatment, indicating significant pain reduction.

DISCUSSION

Pathyamalakyadi Kashaya Ingredients

Amalaki, Haritaki, Vibhitaki, Haridra, Devadaru, Shunti, and Lodhra.

Probable Mode of Action

According to *Acharya Charaka*, the action of all drugs depends on their five properties: *Rasa, Guna, Virya, Vipaka, and Karma.*

1. Rasa

○ **Tikta Rasa:** The drugs possess *Tikta Rasa*, which aids in the digestion of *Ama* and enhances *Agni*. This *Rasa* helps in cleansing the channels, particularly *Raktavaha Srotas*, leading to blood purification. Its

properties include *Deepana, Pachana, Raktaprasadana, Daha-Prashmana, and Shoshana.*

○ **Kashaya Rasa:** Predominantly consisting of *Prithvi Mahabhuta*, *Kashaya Rasa* performs a *Stambhana* action, essential in treating *Asrigdara*. Its properties include *Stambhana, Rakta-Pitta Prashmana, and Shoshana.*

2. Guna

○ In *Asrigdara*, there is an increase in *Drava Pitta*, which includes *Teja* and *Jala Mahabhuta*. The drugs possess *Laghu* and *Ruksha* qualities, which help in the *Shoshana* of the increased *Jala Mahabhuta*. They also act as *Kapha-Pitta Shamaka.*

3. Virya

○ The drugs have both *Sheeta* and *Ushna Virya*. *Sheeta Virya* is *Pitta Shamaka* and *Rakta Stambhaka*, directly acting on *Teja* and *Jala Mahabhuta*, contributing to their *Raktapittahara* properties.

4. Vipaka

○ The *Vipaka* of these drugs is *Katu*, which is *Laghu* and acts as a *Kaphagna.*

5. Karma

○ *Pathyamalakyadi Kashaya* works according to *Vyadhi Pratyaneeka Chikitsa*. It acts as a *Deepana, Pachana, Rakta Shodhaka, Rakta Stambhaka, Vranaropaka, Balya, Shothahara, Raktapittahara, Garbhashaya Sankochaka, and Rasayana.* It also regulates the normal function of *Apanavata.*

Mode of Action of Pathyamalakyadi Kashaya

- *Amalaki, Haritaki, and Vibhitaki:* Possess analgesic properties, reducing abdominal and low back pain.
- *Shunti and Haridra:* Possess antioxidant properties.
- *Devadaru:* Has anti-spasmodic properties, reducing pain.
- *Lodhra:* Has hemostatic properties, controlling intrinsic hemorrhage.

Rasa Panchaka of the Dravyas of Pathyamalakyadi Kashaya

The combination of these properties and actions makes *Pathyamalakyadi Kashaya* effective in treating conditions like *Asrigdara* by addressing the underlying causes related to *Vata, Pitta, and Kapha Doshas*, and promoting overall balance and health.

Drug	Rasa	Guna	Veerya	Vipaka	Karma	Significant features
<i>Haritaki</i>	<i>Pancharasa Kashaya pradhana Alavana</i>	<i>Laghu ruksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosahara, vatashamaka mainly Shonitasthapana</i>	Astringent, stomachic, purgative. <i>Rasayana, sarvarogahara</i> Diuretic and laxative.
<i>Vibhitaki</i>	<i>Kashaya</i>	<i>laghu ruksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Raktasthambana</i>	
<i>Amalaki</i>	<i>Pancharasa Amla pradhana</i>	<i>Laghu ruksha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshashamaka, pittashamaka Indicated in shwetapradara, soma roga</i>	

<i>Shunti</i>	<i>Katu rasa</i>	<i>Laghu snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Pitta shamaka, Rakta shodhaka</i>	<i>Shothahara</i>
<i>Lodhra</i>	<i>Kashaya rasa</i>	<i>Laghu ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Stambhana Samgrahi Raktasamgrahi Raktastambhaka</i>	Checks intrinsic haemorrhage
<i>Devadaru</i>	<i>Tikta Katu</i>	<i>Laghu snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Rakta prasadana</i>	<i>Amadoshahara</i> Cleanses uterus so useful in purpureal diseases
<i>Haridra</i>	<i>Tikta Katu</i>	<i>Ruksha laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha vatashamaka Pitta rechaka Pitta shamaka Rakta prasadana, Raktastambhaka Garbhashaya shodhaka Amapachana Useful in rakta srava</i>	<i>Tiktaskandha lekhanitya</i> Curcumin Metabolic correction and antioxidant property <i>Pitta rechaka</i>

Chemical Constitution and Properties of Pathyamalakyadi Kashaya Ingredients

Haritaki

- Contains tannins (hydrolysable), which yield chabulic acid and d-galloyl glucose upon hydrolysis.
- Other constituents: chabulagic acid, chabulinic acid, gallic acid, sorbitol, ethyl galate.^[10]

Amalaki

- Rich in vitamin C (ascorbic acid).
- Contains phosphorus, iron, calcium, fixed oil, phosphatides, essential oil, resinous matter, glucose, albumin, cellulose.^[11]

Vibhitaki

- Contains tannins (20-30%), gallic acid, ellagic acid, phyllembin, ethyl galate, galloyl glucose, B-sitosterol, chebulagic acid, mannitol, glucose, alactose, fructose, rhamnose, bellericanin.^[12]

Lodhra

- Stem bark: triterpenoid saponin, B-sitosterol.
- Leaves: flavanol glycoside rhamnetin, arabinogalactar, phlorizin.
- Decreases blood coagulation time and prothrombin time, exhibits fibrinolytic activity, anti-hemorrhagic potential, vasoconstriction action, and haemostasis.
- Contains loturine, which stimulates prothrombin net formation and platelet aggregation.^[13]

Shunti

- Rhizomes contain aromatic oil (1-4%), starch (40-60%), camphene, phellandrene, zingiberine, cineol, borneol, gingerol, gingerin (oleo-resin).
- Improves digestive ability, reduces inflammatory changes in the uterus, and corrects metabolism.^[14]

Devadaru

- Heartwood: essential oil, p-methyl acetophenone, alantone, sesquiterpenes (B-himachalene, himachalol), cedrinol, taxifolin, cedrusinin.
- Wood oil: oleoresin.

- Leaves: ascorbic acid.
- Possesses *Ushna Veerya* and *Katuvipaka*, helpful in cleansing the uterus in purpural diseases and reducing bleeding.^[15]

Haridra

- Rhizome: 5% volatile oil resin, zingibers, starch grains, curcuminoids.
- Volatile oil: mono and sesquiterpene (a and b-pinene, a-phellandrene, camphor, camphene, zingiberine, a and b curcumenes).
- Manages oxidative and inflammatory conditions, anti-cancerous, anti-microbial, anti-viral.^[16]

Triphala (Combination of Haritaki, Vibhitaki, Amalaki)

- All three contain tannins.
- Tannins: widely occurring group of natural substances, astringent, used as mild antiseptics, in diarrhea treatment, and to forestall minor hemorrhages.

Properties of Ingredients

- *Lodhra*: Anti-hemorrhagic, stimulates prothrombin net formation, platelet aggregation.
- *Triphala*: Astringent, antiseptic, treats diarrhea, prevents minor hemorrhages.
- *Shunti*: Improves digestion, reduces uterine inflammation, corrects metabolism.
- *Devadaru*: Cleanses the uterus, reduces bleeding.
- *Haridra*: Manages oxidative and inflammatory conditions, anti-cancerous, anti-microbial, anti-viral.

CONCLUSION

Pathyamalakyadi Kashaya in the dose of 30 ml twice daily with equal quantity of lukewarm water before food for 2 months is effective in *Asrigdara*. *Pathyamalakyadi Kashaya* is clinically proven as a potent vasoconstrictor, haemostatic, analgesic, and antispasmodic formulation. In this clinical study, *Pathyamalakyadi Kashaya* (study drug) demonstrated *Raktastambhaka*, *Raktashodhaka*, *Garbhashayasankochakara*, and *Vedanasthapana*

properties. The drug showed marked effects in reducing the amount of excess flow, duration of flow, interval of cycles, excess clots in menstrual blood, abdominal pain, low backache, giddiness, and general weakness. *Pathyamalakyadi Kashaya* was found effective in treating *Asrigdara*.

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