



**A CLINICAL STUDY TO EVALUATE THE EFFECT OF *PATHA*
(*Cissampelos pareira* Linn.) ON *KASHTARTAVA* w.s.r TO
DYSMENORRHOEA'**

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ABSTRACT

The *Aushadh* (Drug) *Patha* (*Cissampelos pareira* Linn.) is here was used for clinical study because *Patha* (*Cissampelos pareira* Linn.) has been indicated in *Sushruta samhita* for *granthibhuta artava*, one of the Predominant symptom same as picture of *Kashtartava*. It is thought to be an excellent drug which alleviate and help with symptoms associated with painful menstruation and balances hormones in women. Members of the Palikur tribe in Guyana use a poultice of *Patha* (*Cissampelos pariera* Linn.) as a topical pain reliever, and the Wayapi Indians use a decoction of the leaf and stem as an oral analgesic. In the present study an attempt has been made to understand and to evaluate the efficacy of *Patha* (*Cissampelos pariera* Linn.) on *Kashtartava* w.s.r to Dysmenorrhoea and to contribute the use of *Patha* (*Cissampelos Pareira* Linn.) for its clinical utility in *Kashtartava* w.s.r.

to Dysmenorrhoea.

KEYWORDS: *Patha*, *Kashtartava*, Open Interventional study.

INTRODUCTION

Menstruation is a natural event as a part of the normal process of reproductive life in females. Due to today's sedentary lifestyle and lack of exercise, Dysmenorrhoea is becoming today's burning problem throughout the world which causes discomfort for women's daily activities and may result in hampering day to day activities. A systematic review of studies in

developing countries performed by Harlow and Campbell (2002) has revealed that about 25-50% of adult women and about 75% of adolescents experience pain during menstruation, with 05-20% reporting severe Dysmenorrhoea or pain.^[1]

The term *Kashtartava* is made of two words *Kashta* and *Artava*. *Kashta* means painful and *Artava* means Menstruation. Thus word *Kashtartava* can be expressed as “*Kashtenamuchyati Kashtartava*” i.e the condition where *Artava* is shedded with great difficulty and pain.^[2]

The *Aushadh* (Drug) *Patha* (*Cissampelos pareira* Linn.) is here was used for clinical study because *Patha* (*Cissampelos pareira* Linn.) has been indicated in *Sushruta samhita* for *granthibhuta artava*, one of the Predominant symptom same as picture of *Kashtartava*. It is thought to be an excellent drug which alleviate and help with symptoms associated with painful menstruation and balances hormones in women. Members of the Palikur tribe in Guyana use a poultice of *Patha* (*Cissampelos pariera* Linn.) as a topical pain reliever, and the Wayapi Indians use a decoction of the leaf and stem as an oral analgesic.

Pharmacological anti- prostaglandin, anti inflammatory, analgesic, anti-pyretic properties have been reported in the roots of *Patha* (*Cissampelos pariera* Linn.). Where 50 % ethanolic extract of roots of *Patha* (*Cissampelos pariera* Linn.) showed an anti-inflammatory and analgesic activity by interfering with prostaglandins synthesis in rat and mice respectively.^[3]

In the present study an attempt has been made to understand and to evaluate the efficacy of *Patha* (*Cissampelos pariera* Linn.) on *Kashtartavaw.s.r* to Dysmenorrhoea and to contribute the use of *Patha* (*Cissampelos Pareira* Linn.) for its clinical utility in *Kashtartavaw.s.r.* to Dysmenorrhoea.

MATERIAL AND METHODS

LITERARY REVIEW

Drug review

BOTANICAL DESCRIPTION

Cissampelos pareira Linn. is considered as established source of classical drug

- ❖ **LATIN NAME:** *Cissampelos pareira* Linn.
- ❖ **FAMILY:** Menispermaceae
- ❖ **Meaning of *Cissampelos pareira***^[4]

Cissampelos	-	Ciss (kissos) - ivy
Ampeloc	-	vine (resembling ivy in rambling habit and vine)
Pareira	-	Hairy

✚ **RASAPANCHAKA**^[5]

The *Rasa Panchaka* of *Aushadha* (Drug) *Patha* (*Cissampelos pareira* Linn.) were computed as per API and almost all *Ayurvedic* Text as shown in the Table no. 2.A.20

- ❖ **Rasa** - *Tikta, Katu*
- ❖ **Guna** - *Laghu, Tikshna*
- ❖ **Virya** - *Ushna*
- ❖ **Vipaka** - *Katu*
- ❖ **Karma** - *Tridoshghanta, Raktashodhaka, Visaghana, Bhagansandhankrita, Grahi, Stanyashodhna*

✚ **PRAYOJYA ANGA/ PART USED**

- ❖ *Moola* (Root)
- ❖ *Patra* (Leaf)



✚ **MATRA/ DOSE**

- ❖ *Kwath/Decoction*: 50-100 ml
- ❖ *Churna/ Powder*: 1-3 gm

Disease review

✚ **NIRUKTI/ETYMOLOGY OF WORD KASHTARTAVA**

The term *Kashtartava* is made of two words-

“*Kashta*” and “*Artava*”

- ❖ ***Kashta*** – Painful, Difficult, Troublesome, Ill forced, Wrong, Unnatural, A bad state of thing.
- ❖ ***Artava*** – Belonging to reasons, Period of time, Menstruation.
- ❖ ***Kashtena*** – With great difficulty

Thus the word *Kashtartava* can be expressed as –

“*Kashtena muchyatiiti kashtartava*”

i.e. the condition where *Artava* is shaded with great difficulty and pain is termed as “*Kashtartava*”.

SAMPRAPTI GHATAKA

- ❖ *Dosha : Vata Pradhana Tridosha*
 - Vata* - Vyana, Apana
 - Pitta* - Ranjaka, Pachaka
 - Kapha* - Present as Anubandhita Dosa
- ❖ *Dushya: Dhatu – Rasa, Rakta, Artava*
 - Upadhatu - Artava*
- ❖ *Agni : Jathar agni, Rasa agni, Rakta agni*
- ❖ *Srotasa : Rasa, Rakta and Artavavaha Srotasa*
- ❖ *Srotodushti : Sanga and Vimargagamana*
- ❖ *Udbhava sthana : Amapakvashaya*
- ❖ *Roga marga: Abyantara*
- ❖ *Sthana Samshraya : Garbhashaya*
- ❖ *Vyakta Sthana : Garbhashaya*

CLINICAL STUDY**Criteria for selecting participants**

Participants were enrolled as per following inclusion and exclusion criteria.

INCLUSION CRITERIA

- ❖ Patients or Parents of the young patients who agree to give written consent.
- ❖ Patients suffering from painful menstruation
- ❖ Pain along with scanty or average amount of menses.
- ❖ Age group: Menarche to 30yrs.
- ❖ Patients suffering from primary dysmenorrhoea for more than 3 cycles.

EXCLUSION CRITERIA

- ❖ Patients or parents of the young patients who do not agree to give written consent.
- ❖ Patients below 10 years and above 30 years.
- ❖ Patients with chronic systemic illness.
- ❖ Patients with intrauterine contraceptive devices
- ❖ Menorrhagia
- ❖ Any uterine pathology fibroid, adenomyosis, endometriosis.(To be ruled out by USG)
- ❖ Hypothyroidism and Hyperthyroidism Patients. (To be ruled out by Thyroid Function Test)

✚ CRITERIA FOR SELECTION OF PATIENTS

After proper differential from other similar diseases, diagnostic criteria for *Kashtartava* patients in the study based on the following subjective and objective parameters:

✚ SUBJECTIVE CRITERIA

Grade	Severity of pain (Multidimensional scoring pattern)
0	Menstruation is not painful and daily activity unaffected.
1	Menstruation is painful and daily activity not affected. No analgesic required.
2	Menstruation is painful and daily activity affected. Analgesic drugs are needed
3	Menstruation is painful, she is no able to do even her normal routine work and she has to be absent from class/office during menses. She takes analgesic but poor effect

Grade	Duration of Pain
0	No pain in menstruation
1	Pain persists less than 12 hours
2	Pain continues for 12-24 hours
3	Pain continues more than 24 hours

Grade	Artava Pramana (By number of Pad)
0	6-7 pads/cycle
1	4-5 pads/cycle
2	2-3 pads/cycle
3	Spotting or 1 pad/cycle

Grade	Artavasrava Avadhi
0	Duration of menses 4-7 days
1	Duration of menses 3 days
2	Duration of menses 2 days
3	Duration of menses 1day

Grade	Yatochitkala Adarshanam (Interval)
0	25-35 days
1	36-45 days
2	46-55 days
3	56-65 days

Grade	Vankshana Shula, Kati Shula and Janu Shula
0	No pain
1	Presence of all 03<1 hr / 02 features<6hrs/01 feature<12hrs
2	Presence of all 03 1-2 hrs / 02 features 6-12 hrs / 01 feature>12 hrs
3	Presence of all 03>2 hrs / 02 features 12-24 hrs / 01 feature > 24 hrs

Grade	Aruchi (Loss of Appetite)
0	Takes full diet and also presence of proper appetite at the next meal hour
1	Presence of moderate appetite and promote appearance of appetite in next meal hour
2	Presence of low appetite but delayed appearance of appetite in next meal hour
3	Persisting low appetite or frequently losing appetite unable to consume even

	low diet
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Grade	<i>Praseka</i> (Nausea)
0	No <i>praseka</i>
1	2-3 times/day
2	4-5 times/day
3	>5 times/day

Grade	<i>Chhardi</i> (Vomiting)
0	No <i>chhardi</i>
1	Occasionally
2	1-2 times/day
3	More than 3 times a day

Grade	<i>Vibandha</i> (Constipation)
0	No <i>vibandha</i>
1	Frequency once in a day, but hard stool pass
2	Frequency of stool alternate day and patient feels difficulty in defecation
3	Frequency once per 2-3 days, difficult in defecation

Grade	<i>Atisara</i> (Diarrhoea)
0	No <i>Atisara</i>
1	Occasionally
2	2-3 times/day and <i>drava mala pravriti</i>
3	More than 3 times/day <i>drava mala pravriti</i>

Grade	<i>Shrama</i> (Fatigue)
0	No <i>Shrama</i>
1	Fatigue by single extra work other than daily routine
2	Fatigue by normal daily routine
3	Severe fatigue even without work

Grade	<i>Shirashula</i> (Headache)
0	No headache
1	Headache, ones in menstruation persist for less than 6 hours
2	Frequent headache 2-3 times per menstruation, daily activity not affected
3	Persistent headache throughout the menstruation, daily activity affected

Grade	<i>Swedadhikya</i> (Excessive sweating)
0	No sweating
1	Occurs only at working in hot or doing hard work
2	More in day time and when associated or following hot flushes only
3	Excessive sweating to that extend that patient feels like taking bath, changing clothes

Grade	<i>Tamodarshana</i> (Faints)
0	No faints
1	Occasionally ones per menstruation

2	01 faint per each menstruation
3	More than 01 times per each menstruation

(These were evaluated Before Treatment and After Treatment)

General Evaluating Scale

0 Absence of symptoms

1-15 Mild

16-30 Moderate

31-45 Severe

GROUP SETTINGS: There was single group of 30 patients.

STUDY DESIGN: Open interventional study

Drug schedule and duration

Preparation: 25gm of authenticated dried roots of *Patha* was boiled with 400ml of water and was reduced to 1/4th; i.e. 100ml of decoction was prepared per day per patient.

Route: Oral

Dose: 50ml twice daily, empty stomach prepared kwath was given.

Duration: Will be started from 16th day of Menstrual cycle upto 3 days of M.C. (For 3 Consecutive cycles)

Assesment on: fourth day of menstrual cycle.

Period of study: upto 3 menstruation cycles.

Follow up : Every month on fourth day of menstrual cycle with medicine for 3 months and without medicine on fourth month.

Pathya Ahara: To take fruits, green vegetables, simple foods.

Apathya Ahara: To avoid spicy foods, fried food, fermented foods, non veg, on and around menstruation.

Pathya Vihara: To take rest and do *pranayam* for 10 minutes.

Apathya Vihara: To avoid heavy weight lifting journey, heavy stones walk, tension.

CRITERIA FOR WITHDRAWAL

1. Personal matters
2. Aggravation of complaints
3. Inter current illness
4. Will of the patient

CRITERIA FOR RESULT ASSESSMENT

Complete relief - 75-100 %

Marked improvement – 50- 70%

Moderate relief – 25-50%

Mild relief – 10-25%

No relief – less than 10%

OBSERVATIONS

In the present study, total number of 30 diagnosed patients of *Kashtartava/Dysmenorrhoea* fulfilling the inclusion criteria were selected for Clinical trial. During the study, following observations were made Before and After the treatment and After the follow up.

- ❖ Number of patients registered for the study: 35
- ❖ Number of patients completed the study - 30
- ❖ Number of dropouts - 5

The detailed illustration of the observations collected from the study is as follows:

Effect of therapy

Effect of therapy on the parameters Severity of pain, Duration of pain, Duration of Menstrual flow, Duration of Menstrual flow in days, *Yatochitkala adarshanam*, *Vankshan shula*, *Kati shula and Janu shula*, *Aruchi*, *Praseka*, *Chhardi*, *Vibandha*, *Atisara*, *Shrama*, *Shirashula*, *Swedadikya*, *Tamodarshan* are as follows:

- ❖ In Severity of pain, 70 % of the patients had painful menstruation, daily activity was not affected and no analgesic was required before treatment which was reduced to Grade 0, where 86 % of patients were relieved after treatment.
- ❖ In Duration of pain, 76.7 % of the patients had continues pain for 12-24 hrs, before treatment which was reduced to Grade 0 where 86.7 % of patients were relieved after treatment and theiris no pain in menstruation.
- ❖ In Duration of Menstrual flow, 100 % of the patients had used 2 to 3 pads per Cycle, daily activity was not affected and no analgesic was required before treatment which was reduced to Grade 0 where 46.76 % of patients were relieved after treatment and the duration of flow was increased where max. patients were using 6 to 7 pads per cycle.
- ❖ In Duration of Menstrual flow in days, 100 % of the patients had duration of menses of 2 days before treatment which was reduced to Grade 0 where 86.7 % of patients were relieved after treatment and duration of menses of max patients increasedd from 4-7 days.

- ❖ In *Yatochitkala adarshanam*, 100 % of the patients had *Yatochitkala adarshanam* for 46-55 days before treatment which was reduced to Grade 0 where 70 % of patients were relieved after treatment and *Yatochitkala adarshanam* for 25-35 days.
- ❖ In *Vankshan shula, Kati shula and Janu shula*, 83.3 % of the patients had presence of all three symptoms for 1-2hrs/02 features for 6-12hrs /0-1 features for >12hrs. before treatment which was reduced to Grade 1 where 53.3 % of patients were relieved after treatment and presence of all three symptoms for <1hr/02 features for < 6hrs /0-1 features for <12hrs.
- ❖ In *Aruchi*, 46.7 % of the patients had persisting low appetite or frequently losing appetite unable to consume even low diet before treatment which was reduced to Grade 0 where 86.7 % of patients were relieved after treatment and takes full diet and also presence of proper appetite at the next meal hour.
- ❖ In *Praseka*, 83.3 % of the patients had praseka 4-5 times day before treatment which was reduced to Grade 0 where 63.3 % of patients were relieved after treatment and no praseka.
- ❖ In *Chhardi*, 86.7 % of the patients had occasionally *Chhardi* before treatment which was reduced to Grade 0 where 86.7 % of patients were relieved after treatment and no Chhardi.
- ❖ In *Vibandha*, 83.3% of the patients had frequency of stool alternate day and patient feels difficulty in defeaction before treatment which was reduced to Grade 0 where 63.3 % of patients were relieved after treatment and no *Vibandha*.
- ❖ In *Atisara*, 70 % of the patients had occasionally *Atisara* before treatment which was reduced to Grade 0 where 86.7 % of patients were relieved after treatment and there was no atisara.
- ❖ In *Shrama*, 53.3 % of the patients had fatigue due to single extra work other than daily routine work before treatment which was neither reduced nor increased and was found to be Grade 1 after treatment where 53.3 % of patients showed fatigue due to single extra work other than daily routine work.
- ❖ In *Shirashula*, 46.7% of the patients had headache once in menstruation which persists for less than 6hrs before treatment which was reduced to Grade 0 where 86.7 % of patients were relieved after treatment and had no headache.
- ❖ In *Swedadikya*, 86.7 % of the patients had *Sweda* only during working in hot weather and doing hard work before treatment which was reduced to Grade 0 where 83.3 % of patients were relieved after treatment and had no Sweating.

- ❖ In *Tamodarshan*, 100 % of the patients had only one episode of *Tamodarshan* in each menstruation before treatment which was reduced to Grade 0 where 76.7 % of patients were relieved after treatment and had no *Tamodarshan*.

As per above results null hypothesis is rejected while Alternate hypothesis is accepted i.e *Patha* (*Cissampelos pareira* Linn.) *Moola* (Roots) is effective in relieving pain in *Kashtartava* w.s.r to Dysmenorrhoea.

DISCUSSION

After completing observations and result it is very essential to discuss each and every outcome of research work. As *Acharya Sushruta* also told that only reading of entire content without acquiring any genuine understanding is like ass loaded down with logs of sandal wood works under the weight which it conveys without having the option to see the value in its virtue. So it is necessary to properly analyze and interpret all the findings of research to use theoretical understandings into current practice. Before reaching to any fruitful conclusion (*Nigmana*) is very necessary to discuss (*Upanayana*) all the findings with proper reasoning (*Tarka-Vitarka*).

So in present research work we are going to discuss about:

- Conceptual study
- Clinical finding
- Probable mode of drug action

CONCEPTUAL STUDY

❖ DRUG REVIEW

Patha (*Cissampelos pareira* Linn.) is a well known medicinal climber of Menispermaceae family and is used extensively in Traditional system of medicine. Comprehensive literary review reflected the great medicinal potential of the Plant. The *Patha* (*Cissampelos pareira* Linn.) has been mentioned by various *Acharyas* in different *Varga*, It has been specifically mentioned in *Tikta skandha* by *Abhidhana ratanmala* and *Doshghana varga* in *Sidhamantra prakash* highlighting its importance and correlation for its uptake on the choice of drug for present study. *Patha* (*Cissampelos pareira* Linn.) has synonym *Sara* highlighting its *Sara Guna* and *Sutika paryaya* indicating its utility its *Sutika roga*.

Raktaghani a synonym indicates the one which purifies *Rakta* (Blood) indicating its utility in *Artavajanan* and *Shodhaka* properties.

The *Aushadh Patha* (*Cissampelos pareira* Linn.) has mainly *Tikta Katu Rasa*, *Laghu Tikshna Guna*, *Ushna Virya* and *Katu Vipaka*. Only in *Raj nighantu* the *Patha* has been told to have *Guru Guna*. It has *Tridoshghana* property but some *Acharyas* has specifically mentions that it has *Vata Kaphahara* property. Thus alleviating *Vata* which is the main *Dosha* involved in *Vyadhi Kashtartava*.

Acharya Sushruta & In *Dhanvantri nighantu*, *Madhav nighantu*, *Raj nighantu*, *Bhavprakashan nighantu*, *Priya nighantu*. *Patha* is told to have *Artavajanan* actions and *Shoolaghana* action substantiates its base for its uses in *Kashtartava*.

The Pharmacologically properties also indicates its Antiinflammatory Analgesic activities. Regarding drug controversy two types of *Patha* has been told by *Acharyas*, *Raj Patha* and *Laghu Patha*. Although by *Kritikar & Basu*, the variety *Stephania Japonica* is considered as *Patha* and *Cissampelos Pareira* as *Laghu Patha* But the most accepted and generalised information as compiled from text stated that *Patha* is *Cissampelos pareira* only, *Cyclea Peltata* and *Staphonia japonica* are taken as *Raj patha*.

❖ DISEASE REVIEW

Kashtartava is a common ailment providing impact on both physical and mental health of woman during routine activities. In *Ayurveda Kashtartava* is not described as separate *Vyadhi*. Many diseases can be correlated to *Kashtartava* but most precisely *Udavartani Yoni vyapad* can be considered here as *Kashtartava*, due to similarly in characteristics features of pain during menstruation.

Acharya Charaka has mentioned that none of gynaecological disease can be rise without the affliction of *Vata*. *Vata* is the main responsible factor, though other *Doshas* only be present as *Anubandhita* to it. So pain is produced due to vitiation of only *Vata dosha* or its combination with other *doshas*.

Pratyatma lakshans of *Vyadhi Kashtartava* (Dysmenorrhoea) is *Shoola* (Pain) i.e Painful menstruation.

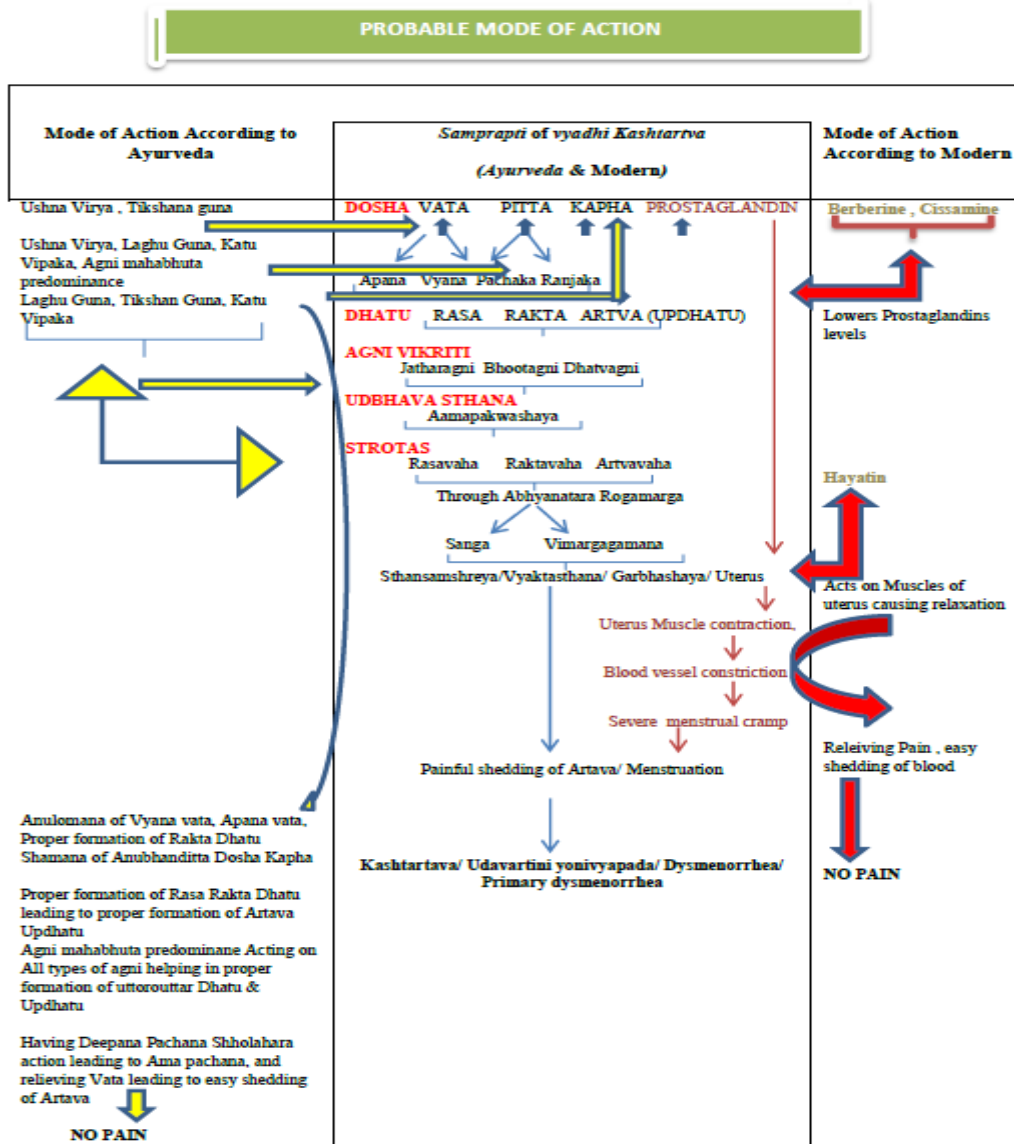
Eventhough the etipathogenesis in different, Still the main *Dosha* responsible for *Vyadhi* is *Vata dosha* especially *Apanavata* and *Vyanavata*.As it is said-

नहि वातादृते योनिर्वनितानां प्रदुष्यति ।

अतो जित्वा तमन्यस्य कुर्याद्दोषस्य भेषजम् ॥ ५३ ॥ (अ० सं० उ० ३९/५३)

Without the vitiation of *Vata dosha* the *yoni* in female cannot get *dushit*. Hence the first line of treatment for any type of *yoni* disease is *Vata shamak chikitsa* and then *Anubandhita dosha chikitsa*.

Here in *Vyadhi Kashtartava* (Dysmenorrhea) the main *dosha* involved is *vata pitta* along with *Anubandhita dosha kapha* and there is involvement of *Vyana vata* and *Apana vata*.



CONCLUSION

The study concludes that *Ekal Prayog* of *Aushadha* (Drug) *Patha* (*Cissampelos pareira* Linn.) *Moola* (Roots) has effective role in subsiding symptoms associated with *Vyadhi Kashtartava* (Dysmenorrhoea), It also concludes that *Kashtartava* can be closely correlated with *Udavartani Yonivyapad* in *Ayurveda* and Dysmenorrhoea specifically Primary dysmenorrhoea in modern.

✚ Adverse Drug Reaction (ADR)

No ADR reported in present trial. So it can be concluded that the *Aushadha* (Drug) *Patha* (*Cissampelos pareira* Linn.) *Moola* (Roots) trial drug is safe.

✚ Recommendation

- ❖ As the study shows empowering result, it is suggested that this study ought to be done on the large number to trial subject for more evidence.
- ❖ At the time of trial, the decoction of *Patha* (*Cissampelos pareira* Linn.) *Moola* (Roots) was not Palatable, So It can be given in other dosage form.

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A CRITICAL REVIEW OF PATHA (*CISSAMPELOS PARIERA* LINN.)- A CLASSICAL DRUG

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ABSTRACT

Patha is one of the widely used medicinal plants since Vedic period. In classical texts, the plant is also cited as an edible leafy vegetable apart from its medicinal properties. Patha is indicated in the treatment of various disease conditions as a single drug and as an ingredient of many compound formulations. In the present review, literary review of Ayurvedic classical plant Patha has been described which encompasses botanical description, synonyms, therapeutic uses, pharmacological activity, properties, uses and recent research of *Cissampelos pareira* Linn which may help us to know the effectiveness of *Cissampelos pareira* Linn.

KEYWORDS: *Cissampelos pareira*, Menispermaceae, India

traditional medicine.

INTRODUCTION

In Ayurveda, drugs play an important role in Chikitsa. Uses of plants for treatment purpose is as old as origin of human being. Patha is one of the important drugs, which is in use since vedic periods. In Samhita kala Patha is also widely used for treating various disorders and also used as edible vegetable. In Charak samhita Patha dwaya is mentioned in Kasa-chikitsa but detail description about its variety is not furnished. Acharya Sushruta and Acharya Vagbhatta have not mentioned any types for Patha. In nighantu kala Laghupatha (small variety) and Rajpatha (big variety) is classified first Sodhala nighantu. Patha is included in

Jwarahara dashemani and in Stanysodhana dashemani in by Charak, while by Sushruta in Pippalyadi, Aragvadhadi, Mustadi, Patoladi ganas.

Botanical name: *Cissampelos pareira* Linn.

Family: Menispermaceae.



Image No.1 Patha (*Cissampelos pareira* Linn.)

SYNONYMS: Table No. 1.1 Interpretation of synonyms of Patha.

No.	Synonyms	Nirukti
1.	पाठा	1. पठयते इति पाठा। पठ व्यक्तायां वाचि धातुः It strengthens the voice. 2. पठयते स्तूयते वा गुणकारित्वात्। Many people appreciate it because of its qualities.
2.	प्राचीना	प्राची भवा। It grows in Eastern parts.
3.	मालवी	मालवदेशे बाहुल्येन जाता It grows in Malava Desha
4.	कुचेलिका	1. कौ भूमौ चेलति प्रसरति वा । It spreads on the ground or is a climber. 2. कुत्सितं रोगं चलयति निवारयतीति । It combats the diseases.
5.	फञ्जिकासदृश	It resembles फञ्जिका ((Rivaornate Chois).
6.	वृत्तपर्णिका	It has round leaves.
7.	विद्यकर्णिका	विद्वो कर्णो यथा विकर्णो It has peltate leaves.
8.	एकाष्टीला	Fruit has single stony seed.
9.	पापचेलिका	पापकितः इति पापचः वायुः तम् ईरयति कम्पयति इति। It alleviates Vata dosha
10.	स्थापनी	बस्तिकर्मोपयोग्या। It is useful in Bastikarma.
11.	वारुणी	अब् धातु स्थापनात्।

		It is useful in Bastikarma.
12.	रक्तघ्नी	Purifies blood.
13.	रुचिष्या	Improves relish.
14.	विषघ्नी	Antipoisonous.
15.	अम्बष्ठा	अम्बा माता इव तिष्ठति It provides protection to health like mother.
16.	श्रेयसी	अतिशयेन प्रशस्ता It is a much praised herb.

RASAPANCHAKA: Table No. 1.2 Rasa panchaka of Patha.

Nighantu	Rasa	Guna	Veerya	Doshagnata
C.S		Tikta	Laghu	Tridoshaghna
S.S		Tikta		-
A.S		Tikta	Laghu	Tridoshaghna
D.N		Tikta		Tridoshashamani
K.N	Katu		Tikshna Laghu	Ushna Tridoshaha
M.N	Katu		Tikshna Laghu	Ushna Vatasleshmahara
B.N	Katu		Tikshna Laghu	Ushna Vatasleshmahara
R.N		Tikta	Guru	Ushna Vatapittapaha
M.D				Kaphapittapaha
Rv.N			Laghu	Kaphapittahar
Sm. P				Tridosahar
So.N	Katu,	Tikta		Kaphapittapaha
P. N		Tikta		Ushna Kaphavatanuta

KARMA– Table: 1.3 Showing karma of Patha according to different authors

Karma of Patha have been compiled from various treatise and tabulated below.

No.	Karma	S.N	A.N	D.N	So.N	M.N	K.N	Bh.N	R.N	Rv.N	P.N
1.	Vishaghna	+	+	+	-	+	+	+	-	-	-
2.	Vrishya	-	-	+	-	-	-	-	-	-	-
3.	Kandughna	+	-	+	-	+	+	+	-	-	-
4.	Kushtaghna	-	+	+	-	+	+	+	-	-	+
5.	Shulaghna	-	-	+	+	+	+	+	+	-	+
6.	Krimighna	-	-	-	-	+	+	+	-	-	-
7.	Sandhaniya	-	-	-	-	-	-	-	+	-	-

ROGAGHNATA TABLE: Table No. 1.4 Rogagnata of Patha.

No.	Rogagnata	S.N	A.N	D.N	So.N	M.N	K.N	Bh.N	R.N	Rv.N	P.N
1	Atisara	-	-	+	-	+	+	+	+	+	+
2	Aruchi	-	+	-	-	-	-	-	-	-	-
3	Chhardi	+	-	+	-	+	+	+	-	-	+
4	Daha	-	-	-	-	+	+	+	+	-	-
5	Gulma	-	-	-	-	+	+	+	-	-	-
6	Hridruja	-	-	+	-	+	+	+	-	-	+
7	Jwara	+	-	+	-	+	+	+	+	-	+

8	Kamala	-	+	-	-	-	-	-	-	-	-
9	Shvasa	-	-	-	-	+	+	+	-	-	-
10	Prameha	+	-	-	-	-	-	-	-	-	-
11.	Vrana	+	-	-	-	+	+	+	-	-	-

Parts Used

Root, leaf

THERAPEUTICS USES

CLASSICAL – Bahya prayoga

1. Vrana

- In Kaphaja vrana paste of leaves of Patha, Moorva, Guduchi, Kakamachi, Haridra, and Shukanasa should be applied.^[1]
- In case of shudda vrana the oil prepared out of Vidanga, **Patha**, and Haridra kalka is applied externally.^[2]

2. For easy delivery

By applying the paste of Patha, Tulasi, Vasa, Apamarga and Kutaja separately on umbilicus, pelvis and vulva of the woman, deliver easily.^[3]

Abyantara prayoga

1. Jwara

Juice of Patha root taken in the morning for 3-4 days checks fever with rigor.

2. Atisara

- The dried vegetable of Lonika and Patha cooked with curd and Pomegranate and added with profuse fat should be given in food.^[4]
- Ankola root and Patha leaf with Buffalo's buttermilk checks diarrhoea.^[5]
- Patha pounded with cows curd alleviates Diarrhoea immediately.^[6]
- Patha, Jambutwak, Shunti, Dhanyaka and Bala are used in Kaphaja Atisara.^[7]

3. Stanyadosha

Patha, Shunti, Kakajangha and Murva are given with hot water in Phenasangata.^[8]

Patha, Nagaramusta and Shunti are given in Picchiladugha.^[9]

4. Artavadosha

In grantibhuta artava Kwatha of Patha and Trikatu is the best remedy.^[10]

5. Arsha

Patha combined with any one of Duralabha, Yavani, Bilva, or Shunti cures piles.^[11]

6. Vibhanda

Patha churna, Shunti and jaggary mixed with juice of Amla Dadima which is efficacious in Vibanda.^[12]

7. Shotha

Liquid gruel cooked with Patha and Panchakola is useful in oedema, diarrhoea, heart disease, gulma, piles, slow digestion & prameha.^[13]

8. Prameha

For Lavanameha Decoction of Patha and Aguru is the specific remedy.^[14]

In Sarpimeha one should take the powder of Patha, Kutaja, Hingu, Katuka, Kushta with Guduchi and Chitraka.^[15]

9. Abhyantaravidradhi

Patha root mixed with honey and taken with Rice water anupana cures internal Abscess immediately.^[16]

10. Stanyasodhak

Patha comes first in the Galacto depurant group.^[17]

11. Ardhavabhedaka

Hemicrania is relieved by taking Patha leaf as the snuff.^[18]

12. Pleehodara

Intake of root of White Punarnava or Patha or Guduchi pounded with rice water cures splenomegaly.^[19]

PHARMACOLOGICAL ACTIVITIES: Table No. 1.5 Showing pharmacological activities of *Cissampelos pareira*.

Sr.no.	Activities	Research title
1.	Antinociceptive and anti-arthritis activity	Antinociceptive and antiarthritic activity Of <i>Cissampelos pareira</i> roots. ^[20]
2.	Anti-inflammatory activity	Evaluation of anti-inflammatory activity of <i>Cissampelos pareira</i> root in rats. ^[21] Anti-inflammatory activity of Methanolic extract of Root of <i>Cissampelos pareira</i> on Carragenin induced rat paw edema. ^[22]
3.	Anti-fertility activity	Antifertility activity of Hydro – alcoholic extract of <i>Cissampelos pareira</i> Linn. On male Albinorats. ^[23] Antifertility activity of the methanolic leaf extract of <i>Cissampelos pareira</i> in female albino rats. ^[24]
4.	Antioxidant activity	Antioxidant activity of <i>Cissampelos pareira</i> on benzo (a) pyrene-induced mucosal injury in mice. ^[25]

5.	Chemo-preventive effects	Evaluation of <i>Cissampelos pareira</i> against gastric cancer and enzymes associated with carcinogen metabolism. ^[26]
6.	Anti-hemorrhagic effects	Effects of an extract of <i>Cissampelos pareira</i> on the hemorrhagic and proteolytic activities from <i>Bothrops asper</i> venom. ^[27]
7.	Gastroprotective effects	Gastroprotective effects of ethanolic extract from <i>Cissampelos pareira</i> in experimental animals. ^[28]
8.	Cardioprotective effect	Effect of <i>Cissampelos pareira</i> root extract on isoproterenol-induced cardiac dysfunction. ^[29]
9.	Anti-diarrhoeal activity	Tumor inhibitors VI. Cissampareine, new cytotoxic alkaloid from <i>Cissampelos pareira</i> . Cytotoxicity of bisbenzylisoquinoline alkaloids. ^[30]
10.	Hepato-protective effect	Hepatoprotective effect of hydroalcoholic extract of <i>Cissampelos pareira</i> against rifampicin and isoniazid induced hepatotoxicity. ^[31] In vitro and in vivo hepatoprotective activity of <i>Cissampelos pareira</i> against carbon-tetrachloride induced hepatic damage. ^[32]
11.	Memory enhancing activity	Memory enhancing activity of <i>Cissampelos pariera</i> in mice. ^[33]
12.	Anti-hyperglycemic activity	Antihyperglycemic activity of methanolic extract of <i>Cissampelos pareira</i> Linn roots on blood glucose levels of Streptozotocin-Induced Diabetic rats. ^[34]
13.	Antioxidant and immunomodulatory activity	Antioxidant and immunomodulatory activity of the alkaloidal fraction of <i>Cissampelos pareira</i> Linn. ^[35]

Botanical classification of *Cissampelos pareira* Linn.^[36]

Kingdom - Plantae

Division - Tracheophyta

Subdivision - Spermatophytina

Infradivision - Angiospermae

Class - Magnoliopsida

Superorder - Ranunculanae

Series - Thalamiflorae

Order - Ranunculales

Family - Menispermaceae

Genus - *Cissampelos*

Species - *pareira*

Ayurvedic Properties: (The Ayurvedic Pharmacopeia of India)

Rasa: Tikta

Guna: Laghu, Tikshna

Veery: Ushna

Vipaka: Katu

Dosshagnata: Tridosham aka

Karma: Vrana ropana, Vishaghna, Kushthaghna, Deepana

VERNACULAR NAMES^[37,38,39,40]

English - Velvetleaf

Hindi - Patha, Pathi, Padh, Purain pathi

Gujarati - Karendhiu, Laghupadovel

Konkani - Paadavela

Kannada - Kodupalli, Pariraaberu

Malayalam - Kattuvalli, Malathangi

Marathi - Pahadvela, Pahadmul

Punjabi - Batbel, Batindupath, Katori, Pilijari, Tikari, Parbik

Bihar - Bandarkanawa,

Kashmiri - Butterbail, Pariki

Oriya - Akarnamini, Okanabindhu

Tamil - Appatta, Panmushtie, Pomushtie, Vata-tirupie.

Telugu - Adavibankateega, Visaboddi, Patha

Tulu - Paadarande, Thipale

CONCLUSION

Cissampelos pareira Linn. is a potential herb belongs to the family Menispermaceae. Number of species is available throughout the world but only one species is available in India. It is concluded that *Cissampelos pareira* have potential medicinal activity and can be used in the treatment of various diseases. By going through literature review, various pharmacological activities of this plant has been familiarized. The review made from various perspectives clearly indicates that *patha* is an indispensable drug of Ayurvedic physician's armamentarium.

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**AYURVEDIC REVIEW OF FACTORS AFFECTING DRUG DOSAGE*****¹Dr. Himani and ²Dr. Rosy Gupta**¹M.D. Dravyaguna Scholar, ²Reader,P.G.Department of Dravyaguna, Post Graduate Training & Research Institute,
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ABSTRACT

Treatment of a disease generally depends upon various factors related to the disease, the diseased and the drug. Out of these the drug related factors like dosage, time and route of administration and proper way of administration (yukti) need special concern as Aushadh (Drug) is one among the four chatushpada mentioned in Ayurveda text. Drug dosage is of prime most importance among these drug related factors as same amount can't be given to all on generalized basis. In Ayurveda even the Ahaarmatra is given importance and is considered a subjective matter. Then Aushadh matra is still more important, as a small variation in drug dosage can have far reaching consequences upon body tissues as compared to the food articles. As per Ayurveda drug dosage varies from person to person depending upon various factors like Dosha, Agni, Bala, Vaya, Vyadhi, Satmya, Satva, Koshta etc.

which will be discussed in this article. These factors can be compiled under Balcatustaya namely Dehabala, Agnibala, Chittabala, and Rogabala. Apart from these Rog bala /Dosha bala and Rogibala gaze factors Aushadh, Aushadh kalpana (Drug Preparation), time and route of administration of drugs also need to pay attention to decide the drug dosage. Medicines used in personalised dose regime cure diseases without posing any problem. Whereas medicines in excess dose will have toxic effects and in low dose will remain insufficient to treat the disease. It is the matra (dose) only by which visha becomes amruta and vice versa.

KEYWORDS: Aushadha Matra (Drug dose), Visha, Agni, Dasavidha Aatura Pariksha.

INTRODUCTION

Matra in general means the measure of any kind, quantity, size, duration, number, degree etc. In therapeutics Bshajja/ Aushadha matra refers to the dosage of drug to be given at one time or in a day and the study of drug dosage is called posology.

Charaka in Matrashitiyaadhaya of Sutra Sthana has described the importance of proper quantity in relation to meals. The amount of the food which gets digested as well as metabolized in proper time, without disturbing the equilibrium of Dhatus and Doshas of the body is regarded as proper quantity (Matra) of food. Aharamatra is subjective and mainly depends upon personal Agnibala and eating capacity.^[1] This makes sense to give special attention to the drug dosage in Ayurveda where dietetics like common thing is discussed for proper quantity then why not the drugs, which have more potent effect on our body tissues as compared to food articles. A small variation in drug dosage can have far reaching consequences. Definitely drug dosage also varies from person to person and same amount can't be given to all on generalized basis. Same dose may be perceived as more or less to different persons. To get optimum benefits of a drug one should have to consider some factors while deciding drug dosage for a particular person. In conventional pharmacology, factors like age, weight, surface area, and enzymatic action etc. are considered whereas Ayurveda discusses factors like Dosha, Agni, Bala, Vaya, Vyadhi, Satmya, Satva, Koshta etc. to decide drug dosage.

Chakrapani in his commentary described Matra as either the Ahara or Aushaha when taken in proper quantity, produces optimum results without posing any problem. With regard to the drug Charak has mentioned that it is the dose only which differentiates visha (poison) and amruta (nectar) i.e. Visha becomes Amrita and vice versa. A drug used in proper dose acts like amrut to cure diseases and the high dose may harm the body like visha or may be excreted out by the excretory system. Drugs used in low dose remain incapable to cure the diseases.^[2]

The success of treatment depends upon proper dosage, time and mode of administration (yukti) of the medicaments. Generally physicians consider dose and time to be more important, where dose is the prime most one.^[3]

Ayurvedic crude drugs are a combo pack of many constituents. Though the multiple phytochemicals help to counter the negative effects of each other and also have synergistic

effects but the active constituent also gets diluted by the presence of multi constituents. Thus in general the dose of crude Ayurvedic drugs is more than the conventional medicine as Ayurvedic drugs also contain plant based fibrous material.

CONCEPT OF MATRA IN AYURVEDA

Acharaya Chakarpanidatta has signified matra in following areas:

- Ahara Matra - Quantity in relation to meals.
- Vyama Matra – Quantum of Physical Exercise.
- Aushadha Matra – Drug Dosage.

Aushadha in reference to Matra may be:

- Matravata Aushadha: Proper Dose.
- Amatravata Aushadha: Improper Dose - It may be Heena matra (Low Dose) / Atee matra (High Dose).
- Heena Matra (Low Dose) - It is unable to treat disease and even unable to create any dhatu samyata. Usage of sodhana aushadha in heena matra produces utklesa of dosha and ayoga vyapada i.e. unable to eliminate doshas completely.
- Atee Matra (High Dose) - It causes the vitiation of tridosha, cause toxicity of dhatus and thus leading to many undesired results, even death. Excess drug generate extra pressure on Malamargas for detoxification of the body. Usage of Sodhana Aushadha in Atimatra causes Atiyoga vyapada and may result into emergency and risk of life too.

SPECIAL MATRAS

Vagbhata (A.H.Su.16/18) has mentioned the following:

- **Vardhamana Matra:** It is a special dose design when drug administration is started with low dose and the biological platform is prepared to assimilate the greater dose of the same drug gradually to avoid its dependency or withdrawal symptoms. Further the gradual increase of dose may reach the deeper tissues in due course of time.

Example: Vardhamana Pipalli Rasayan, Bhallatak kalpa etc.

- **Harasiyasimatra:** In Shenapana Vagbhata and Susruta described Harasiyasimatra to know the Agnibala of patients before fixing the dose, it is something like test dose.^[4]

FACTORS AFFECTING DRUG DOSAGE

In different Ayurveda treatises general dosage has been mentioned for persons having moderate type of koshtha, age and strength etc. with reference to various ailments. Charaka

and Sharangadhara have mentioned that keeping this standard in view dose can be personalised according to Dosha, Agni, Bala, Vaya, Vyadhi, Kala, Prakruti, Desha Kostha etc. All these factors are helpful to decide the Matra for an individual for better management.^[5,6] Sushruta and Chakrapani described that the dosage of drug should be administered after considering the strength of the disease (Rogabala), digestive enzymes (Agnibala) and the strength of the body of the patients (Aturbala). Aturbala is counted in terms of Dehbala and Chittabala. To summarise all these factors can be compiled as Balcatustaya namely Dehabala, Agnibala, Chittabala, and Rogabala.

Dasavidha Aatura Pariksha in Ayurveda is the most scientific, complete and competent approach to clinical examination, because it is integration of both Rog Pariksha and Rogi Pariksha. It elicits an accurate account of Vyadhibalaprmana and sets this against the background of Aturbalaprmana, which helps in deciding proper Aushadh Matra. Apart from these Rog bala /Dosha bala and Rogibala gaze factors Aushadh, Aushadh kalpana (Drug Preparation), time and route of administration of drugs also need to pay attention to decide the drug dosage.

While compiling all the above references, Drug Dosage can be decided after considering the following factors

1. Vaya (Age): Age is the foremost important factor while deciding drug dosage. But all drugs can't be given to different age groups. Some drugs are simply contraindicated for children and the aged persons. For the indicated ones Ayurveda text directs the dose with regard to age.

As per Charak the Dosha, Dhatu and Mala in children are apripakva (immature) as compared to the adults. Thus the drug given to child must be of low potency, should be less in dose as well as less frequently be administered.^[7]

Acharya Susrutha^[8] has given the guidelines for deciding the dose for infants and children as -

- For Ksirapa (upto 1year age) - The dose of medicines should be one pinch, means the quantity which is held between thumb and index finger and it should be mixed with honey or ghee.
- For Ksiraanada (1-2yr age) - Medicine made as paste shall be of the size of the seed of Kola (Badar).

- For Annada (more than 2year age) - Dose equal to the size of Kola (Badar).

According to Kashyapa^[9]

Dose of ghrita to a newborn should be Vidangaphalatulya (Fruit of *Embelia ribes*). Then the dose is gradually increased. The maximum dose should not exceed the weight of Amalakiphala (Fruit of *Embelica officinalis*).

According to Sharangadhara^[10]

- 1st month : 1 Ratti (125mg)
- 2nd month- 1 year : Increase by one Ratti every month (250 mg-1.5gm)
- 1 year- 16 year : Increase by one Masha every year (1.5 gm – 16.5gm)
- 16- 70 years : Adult dose of 16.5 gm
- After 70 years : Decrease slowly as that of child dose
- This dose is mentioned for churan (powder) and kalka (paste) preparations and kwath (decoction) preparations should be taken four times to this.

At present one time single dose of 16.5 g seems to be quite high for an average adult. So this can be taken for full day dose and thus can be taken in divided doses in whole day. That too is of Mridu Virya drugs.

2. Bheshaja: (Potency of Drug): Dose depends upon the Virya (potency) of the medicine also. Chakrapanidatta has clearly mentioned the dose of different types of drug materials.^[11]

- ❖ Tikсна Virya Dravya : 1Karsa (12g) e.g. Sunthi.
- ❖ Madhya Virya Dravya : ½ Pala (24g)e.g. Bilva, Agnimantha.
- ❖ Mridu Virya Dravya : 1Pala (48g) e.g. Amalaki.

But the tolerance power of human beings has decreased over the time. So the doses so mentioned, even if consumed in a whole day in divided doses may remain high. On these guidelines, thus all drugs be used judiciously.

Prolonged and over use of some drugs like Pippali, Kshara and Lavana has been strictly prohibited. Here dose and duration both are being considered.^[12] They become doshavardhak rather than doshshamak by prolonged and over use. Other drugs of similar nature should also be cautiously used. As per the context even the Haritaki, Amalki, Pippali, Bhallatak like

Rasayana dravyas are prohibited and have pharmacovigilance aspect. This makes us cautious about all the drugs.

3. Bhesaja Kalpana (Preparation): Ayurvedic Bhasajya Kalpana encompasses a wide range of drug dosage forms which can be used by health care provider in accordance with the patient's requirement. Svarasa (juice), Kalka (paste), Srita (decoction), Sita (cold infusion) and Phanta (hot infusion) are the five pharmaceutical preparations mentioned in classics. The potentiality of the medicines of the preceding category is greater than the succeeding ones.^[13] So these preparations should be prescribed with due regard to the strength of the patient and seriousness of the disease. Satva or Ghana Kalpana of drugs should be given in lesser dose as compared to Svarasa of same dravya.

4. Satmya (Tolerance): The ability to endure the influence of a drug, particularly when acquired by continued use of the substance is called tolerance. If any substance is taken continuously, it may become Satmya. Different factors for Satmya as Desha, Kala, Jati, Ritu, Roga, Vyayama, Rasa etc. are mentioned in samhitas.^[14] Satmya is a one of the type of adaptability. When a drug is Satmya to the body it is required in high doses to produce same results e.g. Ahiphena, Dhatura etc. like narcotics are especially notorious for getting satmya. The development of tolerance can be minimized by initiating the therapy with lowest effective dose and avoiding the prolonged administration.

5. Prakruti (Body Constitution including Genetic factors): As per Ayurveda Prakruti analysis of a patient is very basic before starting treatment. Charaka has mentioned Dashvidha Aatura Pariksha in which Prakruti analysis is done prior to Vikruti analysis. Prakruti tells about the basic constitution of body and genetic makeup. Though racial and species dissimilarities are regarded in modern medicine, but broad categorization of human beings based on genetic similarities is missing there. Ayurveda sees unity in diversity and seven Prakrutis are seven broad categories of human beings based on the genetic constitution. It is noticed that metabolic enzymes and thus the metabolic rate may vary upto six fold in different individuals. Prakruti analysis helps to understand the different reaction of different group of people towards a drug, for selecting the drugs and for deciding their doses. For example Vata Prakopaka Ahara aggravates Vata leading to Vatika disorders more in Vata Prakruti persons than in other prukriti persons.^[15] Therefore laghu, ruksha, shita aushadha ahara are less suitable to vatika prakruti persons. Dose of such dravyas should be decreased while prescribing to vatika prakruti persons. In the same way if Pitta and Kapha prakruti

persons takes more Usna, Tikshan and Sita, Guru, Snigdha aushadha ahara respectively then it leads to Paittika and Shleshmic vikaras in respective persons. Thus accordingly the drugs be decided.

6. Desha (Ecological factor and Patient body): Desha in Ayurveda is taken in two terms – Ecological conditions of the abode of patient and the patient body. For example, it is difficult to treat a patient of Vata Roga especially of Vata dominant colon area and patient staying in Vata dominant dry desert area (Jangala Desh). He will need high dose of Vatahara drugs. Similarly the one suffering from Kaphaj diseases of thorax area and patient residing in Kapha dominant marshy area (Anupa Desha) will need more of Kaphahara medicines. Contrary to it Vatarogi of thorax area and staying in marshy area will need lesser dose of Vatahara drugs and the vice versa. It's also logical that persons living in Ushan areas need more of Sheet Virya drugs and vice versa.

7. Kostha (GIT status): Kostha plays very important role in deciding the Matra e.g. the Virechana dravya to a Krurakostha person need to be given in higher doses. In the same way for Mrdukostha person, smaller quantity is enough to produce the desired effect.^[16]

Type of meals taken can also alter drug absorption. On empty stomach larger absorption area becomes available. Plant based simple Ayurvedic preparations like Swaras, Kalka, Kwath etc. Panchvidh Kshaya Kalpana should be given empty stomach for their better absorption and thus comparatively lesser doses are required. Gastric irritant drugs like Asawa- Arishta are usually taken after meal to reduce the risk of gastric irritation. But their absorption decrease because of presence of food. Acidic drugs are better absorbed from acidic medium of stomach and alkaloid prominent drugs are absorbed better from alkaline medium of small intestine. But stomach area is small whereas long small intestine offers larger area for absorption. Thus comparatively alkaloid drugs need to be given in lower doses.

Drug dose also depends upon the pharmacokinetic character of the drug. In general lesser the bioavailability more dose has to be given. Once a drug enters into systemic circulation by absorption or direct administration, it must be distributed into interstitial and intracellular fluids. Each organ or tissue can receive different amount of different drug and the drug can remain in the different organs or tissues for a varying amount of time. The distribution of a drug between tissues is dependent on vascular permeability, regional blood flow, cardiac

output, perfusion rate into the tissue, the ability of the drug to bind the tissue and the plasma proteins, lipid solubility and PH partition play a major role as well.

8. Dosha & Rogavastha (Humors and Pathological state): Tridosha (Humors) are one of the basic constituents of body, prone to get vitiated. In every disease kind and quantity of vitiated Dosha varies. So, dose should be given according to Bala of Dosha. If Dosha' are less aggravated, low dose of drug would be sufficient. Matra also depends on Doshagati, because Doshagati is responsible for manifestation of Samprapti. Proper Matra may act on particular path (Rogamarga). In Tiryakagatadosha high potency drugs in high doses are required than Kosthagatadosha.

9. Satva & Bala (Psychological State, Weight and strength): This can be correlated to physical and mental strength of the patient. The person with Pravara Satva (strong psychological state) and Bala can tolerate large doses of Tikshna dravya, so one should look after Satva and Bala of the patient before deciding dose. Drug's efficacy can be affected by patient's expectations and attitude; anxious patients require more general anesthetics. Placebo can be used for conditions that cannot be explained on the pathophysiological basis. Here physician and patient relationship has a major role in treatment with placebo.^[17]

10. Agni (Enzymatic action /Metabolism): The concept of Agni is unique in Ayurveda. Here Agni/ fire is the name given to all the metabolic enzymes and the hormones, which are responsible for various digestive processes in GIT and metabolic changes at cellular level. Digestion and metabolism of a drug depends upon this Agni. The Prakruti (body constitution) of a person is named according to the predominance of Dosha and so also the Agni. It is further classified under four categories, viz. Tikshna, Manda, Sama and Visama depending upon the intensity and quantity of the metabolizing enzymes and hormones. Dose of a drug require proper amount of Agni for optimum bioavailability. If given in overdose, the drug like the excess ghee extinguishes the fire, means it doesn't get properly digested and even can diminish/exhaust the existing enzymes. In contrast to this, the fewer dose will not be able to generate expected effects because of less amount of the drug. So dose should be decided considering the Agni of the person which in turn is adjudged by the digestive power of the patient.

11. Bhesajaprayoga Marga^[18] (Routes of Drug Administration)

In Ayurveda classics different internal, external routes of administration of drugs are mentioned for various preparations like oral (vati, chooran, leha, swaras, kwath etc. Khadit,

leedh, peeta, leha), skin (snehan, swedan, lepa, abhyang, etc.), rectal (vasti), nasal (nasya, dhoom), urethral, vaginal (uttarvasti), eyes, ears etc. having different indications and their own pros and cons. Shodhan techniques of Panchkarma are unique in Ayurveda, where large amounts of drugs are also used e.g. in Snehan, Vaman, Vasti etc. Based on the route of administration the dose of the drug may vary, e.g. dose of drug administered in Snehavasti is more than Uttaravasti, in Nasya karma we use drugs in Bindu pramana (few millilitres) whereas in Vasti it's in Prasthas (hundreds of millilitres). Drugs administered orally undergo first pass metabolism and are not fully absorbed due to various physical, chemical and biologic barriers to their absorption, including interactions with the gastric and intestinal contents. All these factors decrease the bioavailability of orally administered drugs. Thus need to be given in high doses as compared the parental dose. In modern medicine various parenteral routes like subcutaneous, intradermal, intramuscular, intravenous etc are in common practice.

12. Kala^[19, 20]

In Charak Samhita Kala refers to Din (different part of the day), Rogi (age and stage of the patient), Aushadh (time of drug administration), Vyadhi (pathological stage of a disease), Jirna Lingha (stage of the digestion of the food), Ritu (running season). Though there seems to be controversy among different Acharyas regarding the number of Aushadh Sevana Kala but directly or indirectly 10 Aushadh Sevana Kala are accepted by all. Even a small dose is sufficient when Aushadhi is given at proper time. Desha bala, Atura bala and Vyadhi bala vary in the whole day, the year and as per the stage of disease. So, Matra of Ausadha to be used according to Kala e.g. in summer season Usna dravya and in winter season Sita dravya should be used in low doses otherwise, it may be harmful. For oral therapy time of drug administration especially matters in relation to meals. Absorption proceeds more rapidly if the stomach and upper portion of the intestinal tract are free of food. But Irritating drugs can't be given to an empty stomach. They are better tolerated by the patient if food is present in the stomach to dilute the drug's concentration.

DISCUSSION

Dose of medicines has very great importance in reference of treating diseases as severe fire can't be stopped by little drops. In the same manner little dose of medicine can't be able to treat disease properly. As more amount of water can damage the crop, similarly high dose of medicine can also cause damage to the patient. It indicates that only the required dose of medicine is supposed to be administered to the patient and also drugs cannot be administered

without measuring their dosages. Thus in context of using drugs, measures and weights are necessary. So dose of drug be so decided that it is enough to treat the disease but don't cause any sort of toxicity.

CONCLUSION

Ayurveda is treasure of all knowledge. Drug dosage is a very significant issue and all treatises have discussed it as per the context. Drugs are directly linked to patient's health and life. They can't be given at random and even can't be fixed rigidly and needs to be tailored per person. Ayurveda science puts forward a variety of factors like condition of the patient, severity of disease, natural tolerance, acquired tolerance, psychological state, Vaya, Bala, Desha, Kala, Dosha, Agni, Koshta, Prakruti, Bheshja Kalpana etc. for deciding the drug dosage. Persons of present era are with low digestive power, lesser tolerance and short life span, so the suitable dose of the drug should be decided by the physician with his own intellect.

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A Comprehensive Study of “Yuvanpidika” - A Literary Review

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ABSTRACT

In Ayurveda, it is termed as *Mukhadushika*. In Ayurveda, *Mukhadushika* is described under the heading of *Kshudra rogas*. These diseases are called as *Kshudra* because of their lesser severity. According to *Sushruta Samhita Nidan Sthana*, these are *Shalmali* thorn like eruption found on the face of adolescents are called as *Mukhadushika* or *Yuvan Pidika*. These are impregnated with *Meda*. Vitiated *Vata Dosha*, *Kapha Dosha* and *Rakta Dosha* are considered to be the main *Samprapti Ghatak* of *Mukhadushika*. In Ayurveda treatment of diseases is mainly of two types of *Chikitsa* are described i.e., *Shodhana Chikitsa* and *Shamana Chikitsa*. Similarly, in *Mukhadushika* also *Shodhana* and *Shamana Chikitsa* is done.

KEYWORDS: *Mukhadushika*, *Ksudra rogas*, *Yuvan pidika*, *Samprapti Ghatak Shodhana chikitsa*, *Shamana chikitsa*, *Yuvanpidika*.

INTRODUCTION

Every living human being of the world is familiar with the word “beauty”. Beauty is that quality or combination of qualities which afford keen pleasure to the senses especially that of sight or which charms the intellectual of moral faculties. It means beauty has physical as well as mental and spiritual aspect too. One of the conditions which harms physical beauty especially of face i.e. *Yuvanpidika* in *Ayurvedic* classics disease *Yuvanpidika* has been described under the caption of disease *Kshudraroga* as

समासेन चतुश्चत्वारिंशत्.....|
.....यौवनपिडिका..... गुदभ्रंशश्चेति ॥ [1]

Likewise, *Acharya Madhava*, *Acharya Vagbhatta* and *Sharangdhara* have followed the same. *Acharya Sushruta* has mentioned 44, *Acharya Vagbhatta* 36 and *Acharya Madhava* has quoted 43 *Kshudrarogas* while *Acharya Sharangdhara* has mentioned 60 *Kshudrarogas*.

क्षुद्र हेतुलक्षणचिकित्सतानांक्षुद्ररोगाणां

According to *Madhava* the diseases which *Nidadana*, *Lakshana* & treatment are described less with respect to other major diseases like *Jwara* etc.

MATERIAL & METHODS

Yauvanpidika

Vyutpatti: पिडिका (पीडयतीति ण्वुल टाप्)

The word *Pidika* is derived from root word „*Pinda* “ with suffix „*Dvunl* + „*Itvam* ‘. From the above it is clear that the circular swelling like *Pinda* (papule, pustule, nodule etc.) is called *Pidika*.^[2]

Yuvanpidika:

यौवनपिडिका युवकाले मुख जातः क्षुद्रस्फोटक ॥

यूनामाननं यूवाननं, तस्य पिडिकायुवान पिडिका: । '

मुखे पचन्ते अत एवमुखदूषिका इति
जायन्ते पिडका यूनां वक्त्रे या मुखदूषिका:

It means the eruptions occur on the face of young person is called *Yuvanpidika*. Sometimes it may appear on upper chest & back but generally it manifests on facial skin only and this might be the reason that word *Mukhdushika* has been used as a synonym of *Yuvanpidika* at many places.

Vernacular Name: -

Sanskrit - *Yauvan Pitika, Mukh-Dushika, Tarunya Pidika*
Hindi - *Keel, Muhanse*
English - *Pimples.*
Latin - *Acne, Acne Vulgaris.*
Gujarati - *Khila*
Panjabi - *Keel*

Table 1: Nidanas of Yuvanpidika

<i>Aharaj</i>	<i>Viharaj</i>	<i>Mansika</i>
<i>Rasatah</i>	<i>Bhuktavadivaswap</i>	<i>Krodh</i>
<i>Madhur, Amla, Lavan</i>	<i>Chardivegapratirodh</i>	<i>Bhaya</i>
<i>Katu, Kashay, Kshara,</i>	<i>Adhik Shrama,</i>	<i>Shoka,</i>
<i>Gunatah</i>	<i>Vyavay, Atijagaran</i>	
<i>Ushna, Tikshna, Vidahi</i>	<i>Atiraktasravan,</i>	
<i>Laghu, Ruksha, Shita,</i>	<i>Atilanghana</i>	
<i>Pichhchhila, Abhishyandi</i>	<i>Vegadharan</i>	
<i>Dravyatah:</i>	<i>Adhik Maithun</i>	
<i>Pinyak, Kulttha, Masha, Nishpav,</i>	<i>Upavasa</i>	
<i>Takra, Dadhi(Amla), Mastu,</i>	<i>Abhighat</i>	
<i>Sukta,</i>		
<i>Tila, Sauvirak, Haritvarga,</i>	<i>Bhuktavadivaswap</i>	
<i>Kulatth, Sarshap, Haritshsak</i>		
<i>Godha-Matsya-Aja-Aavik Mamsa</i>		
<i>Ikshuvikar, Aanupmamsa</i>		
<i>Aharvidhi:</i>		
<i>Ajirna, Adhyashana, Viruddhasa</i>		

Purvaroop:

At the time of *Sammurchhana* of the *Doshas* and *Dushya* the site where the vitiated complex lodge, the functions of that part are disturbed, manifests some premonitory signs. Till the complete manifestation of the disease all the characteristics of the involved *Doshas* do not appear but the affected individual, at the concerned site, alarming the production of an ailment may feel some unease. This stage is named as *Purvarupaavastha* of the disease^[3]. For the disease *Yuvanpidika*, none of the ancient *Acharyas* have mentioned the premonitory signs and symptoms because of its *Alpattvatahetu evam Lakshana*. Still as per disease manifestation mild stickiness and irritation on the skin can be considered as premonitory sign of the disease.^[4]

Roopa:

At the end of *Sthansamshraya* stage, now body starts to manifest actual symptoms of the disease called *Roopa*.

Roop of the disease mentioned by various Acharya:

1. ***Shalmalikantakaprakhyā:*** The eruptions found in the disease are conical in shape, similar to the thorn of *Shalmali* tree, having its broad base in the skin of the face.
2. ***Pidika*** - The vitiated *Pitta* with *Rakta Dhatu* produce *Shoth* (boil) in the *Twacha* (skin) is called *Pidika*.
3. ***Saruja*** - The eruptions are painful. The pain may be mild or severe in nature as said by different *Acharyas*. These symptoms indicate dominancy of *Vayu* and *Pitta*
4. ***Ghana*** - The word *Ghana* means thick, hard, or indurate. So, the eruptions of the disease are hard and thick. This again shows involvement of *Kapha*.

5. Medogarbhavta: - The eruption is impregnated with *Meda*. This *Meda* is packed in the eruption as sebum collected in sebaceous gland. This symptom shows *Kapha* dominancy, so other symptoms of *Kapha* dominancy seen in *Pidika* like can be incorporated here.

Samprapti:

According to *Acharya Sushruta*, the disease *Yuvanpidika* is due to disturbed state of *Kapha*, *Vata* and vitiation *Raktadhatu*. The exact description about the disease process is not available and the involvement of *Pitta Dosha* is not explained in any of the *Ayurvedic* text. The reason behind not mentioning involvement of *Pittadushti* in *Yuvanpidika* because *Pitta Vargiya* substance *Sweda* and *Rakta* are said to be the sites of *Pitta* due to their *Ashrayashrayi* nature. So, when *Rakta* is involved, *Pitta* will automatically be vitiated, because the aggravating factors for both *Rakta* and *Pitta* are similar.

Another reason may be that *Yuvanpidika* itself is a natural period of *Yuvaavastha* and in this period *Pitta* dominancy is obvious as mentioned by *Acharyas*. As *Acharya Charaka* also said that *Pitta* is most essential in the formation of *Pidika*.

As mentioned earlier all the three *Doshas* as well as *Rakta*, *Meda* and *Shukra Dhatu* are involved directly or indirectly in the formation *Samprapti* of the disease. Though *Vyaktisthan* of the *Pidika* is on the skin, involvement of *Rasadhatu* can also be considered here.

As *Bhavprakash* has mentioned *Swabhav*⁵ as one of causative factor for the disease. It should also be considered while thinking about pathophysiology of the disease. So, the *Nidan* of *Yuvanpidika* can be classified into two, i.e.

- (1) *Doshadushtikar*
- (2) *Swabhavik*

Samchaya:

Due to *Nidan Sevan* and nature of age four things take place.⁶

I. Accumulation of Dosha:

Accumulation of all three *Doshas* will be in their own place.

II. Impaired quality of Dhatu:

Rasa, *Rakta*, *Meda* and *Shukra Dhatu* will be impaired directly or indirectly.

III. Agnimandhya and formation of Ama:

Due to *Nidan Sevan Jatharagnimandhya* may be there, as well as *Aparipakva* and *Vivardhman* stage of *Dhatu* & instability mind (*Anaavasthitasatva*) may lead to some of *Dhatvagnimandhya*.

IV. Khavaigunya: Here *Khavaigunya* take place on skin of specifically skin of the face. Many times, it also occurs on the skin of upper chest and back.

Prakopa:

According to *Nidan Sevan* accumulation and aggravation of *Vayu*, *Pitta*, and *Kapha* will be there. Here *Vayu* will be provoked by its *Ruksha* and *Shita* property. Provocation of *Pitta* will be there by *Ushma*, *Tikshna* and *Drava* property. While *Kapha* will be aggravated by *Snigdha* & *Pichchhila Guna*.

Prasara:

The vitiated *Dosha* become ready to circulate. Impaired *Dhatvagni* status leads to formation of consent *Dhatu*.

Stahnsamshraya:

During this stage aggravate *Dosha* start to travel in whole body. Here they get support of impaired *Dhatu* at the place of *Khavaigunya* i.e., facial skin and here they get mixed with these *Dhatu*s that means *Dosh-dushya Sammurchhana* take places at this stage.

Due to *Dosh-dushya Sammurchhana* some mild premonitory symptoms start like-

- I. *Aanane Ushnapratiti*
- II. *Aanane Snigdhta*
- III. *Twak Parushya* etc.

Start to manifest, according to dominancy of aggravated *Dosha Srotas Samkoch* (*Vayu Karmatah*) or *Srotorodh* (*Kapha Gunatah*), or *Srotopaka* (*Pitta Karmatah*) will lead to obstruction in *Srotas*.



Vyaktaavatha:

Inside the obstructed *Srotas* vitiated *Pitta* by (its *Ushna*, *Tikshna* and *Drava* property) and *Rakta* leads to formation of *Pidika*.

Kapha dominancy will lead to broad based & solid (*Shalmalikantakavatconical* shaped and *Ghana*) and sticky material filled (*Medogarbhva*) in *Pidika*.

Dominancy of *Vayu* leads to small and pointed boil formation. In the same way due to dominancy of *Pitta* immediate *Paka*, as well as more *Daha* and *Ushnata* will be found. *Bheda*: If the condition is not treated within time and through proper line of treatment, it may lead to last stage of *Kriyakal* i.e. *Bhedaavastha* Here *Vranavastu* i.e. Scar formation as well as dipigmentation (due to further vitiation of *Rakta*) start to take place.

Samprapti Ghatak: From the above description of *Samprapti*, *Samprapti Ghatakas* can be Summarized as follows.

Dosha: *Kapha*, *Vata*, *Pitta*

Dushya: *Dhatu: Rasa, Rakta, Meda,*

Upadhatu: Twak

Mala: Sweda, Twaksneha

Srotas: Rasavaha, Raktavaha, Swedavaha

Dushhtiprakar: *Sanga*

Agni: *Jatharagnimandya, Dhatvagni Anavasthitvam*

Samutthan: *Aamashaya*

Adhistan: *Sharir*

Vyaktisthan: *Aanana* (face), *Twacha* of Upper chest & back

Rogamarga: *Bahya Marga*

Sadhyaasadhyata: *Yapya*

Chikitsa

यौवने पिडकास्वेष विशेषादछर्दनं हितम्
लेपनं च वचारोधसैन्धवैः सर्षणान्वितैः ॥⁷

कुस्तुम्बुरूवचालोद्धकुष्ठैर्वालेपनं हितम् ।

रोधकुस्तुम्बुरू वचाप्रलेपो मुखदूषिके वटपल्लवयुक्ता वा नारिकेलोत्थशुक्तयः । अशान्तौ वमनं नस्यं ललाटे च सिराव्यध⁸

मुखदूषिकां लोधतुवरिकाभ्यां वा प्रदिह्यात् वटपत्र नारिकेल शुक्तिभ्यां वा सैन्धववचाक्षिभेषजसिद्धार्थकैर्वा एवमशान्तौ छर्दयेत् ललाटे च सिरा विध्येत् ॥⁹

Acharya Sushruta and *Acharya Vagbhatta* have described few *Mukhalepas* that mentioned in above *Shlokas*. If disease does not subside after application those *Lepas* one should go further for *Vaman*, *Nasya* and *Shiravedh*.

DISCUSSION

Sushrut has mentioned *Yuvanpidika* as a *Kshudrarog* that causes harms to the beauty of the face typically during adolescence. There are no specific etiological factors mentioned regarding the disease in *Ayurveda* texts. Most of the *Acharya* supposed *Kapha*, *Vata* and *Rakta* as the causative of these disease while *Bhavprakash* mentioned it as a *Svabhavaj*. The *Katu*, *Guru*, *Snigdhaaharaj* and *Viharaj* like *Jagaran*, *Nidra* and *Vegavrodhaj* play in fluencing role in causing *Yuvanpidika*. Modern science has supposed the hormonal imbalance, increased sebum production, formation of comedone that occurs due to clogging of oil glands of the skin. *Pitika*, *Saruja*, *Ghan*, *Medogarbhva*, *YunaMukha* these are the clinical manifestation in the *Ayurveda*.

CONCLUSION

In current era *Yuvanpidika* is the one of the most burning problems in youngsters. Modern text described *Acne vulgaris* as a chronic inflammatory disorder of sebaceous follicles characterized by the formation of



comedone, papules and pustules, less frequently nodules or cysts. All the *Samhitas* have pointed out *Kapha*, *Vata*, and *Rakta* as the causative factor of disease. In *Ayurveda* number of remedies are available with marked success and benefit over conventional modern drugs. The *Lepa* and *Pralepa* are described as a *Shamana Chikitsa* in previous stages of *Yuvanpidika* while in severe cases *Shodhana Chikitsa* should be applied. Moreover, the *Ayurvedic* therapies have long lasting effects with nil side effects.

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