www.ayurpharm.com
ISSN: 2278-4772

Ayurpharm Int J Ayur Alli Sci., Vol. 7, No. 1 (2018) Pages 1 – 8

Research Article

CLINICAL EVALUATION OF METHIKA (*Trigonella foenum-graecum* Linn.) AND CHANDRASURA (*Lepidium sativum* Linn.) ON KASHTARTHAVA (PRIMARY DYSMENORRHOEA)

Deepa KK[1*], Pradeep HR[2], Shashikant MP[3]

1. *Lecturer, Dept. of Dravyaguna, Shri Gulabkunverba Ayurved Mahavidyalaya, Jamnagar, Gujarat, India.*
2. *Professor, Dept. of Dravyaguna, A.L.N. Rao Memorial Ayurvedic Medical College, Koppa, Karnataka, India.*
3. *Lecturer, Dept. of Dravyaguna, Shri Gulabkunverba Ayurved Mahavidyalaya, Jamnagar, Gujarat, India.*

Received: 06-01-2018; Revised: 18-01-2018; Accepted: 27-01-2018

Abstract

Methika (*Trigonella foenum-graeceum* Linn.) and Chandrasura (*Lepidium sativum* Linn.) both are very commonly used home remedies for Kashtarthava (dysmenorrhoea). From the actions of these drugs, such as vatahara (subsides vata), shoolaghna (pacifies pain), arthavashodhaka (corrects the menstrual cycle in female) etc. it can be inferred about their effective usage in kashtarthava. The conventional science tries to find a cure for this through analgesics, NSAIDs, antispasmodic and hormonal therapy which often results in unwanted effects. Further it is not a permanent solution to the ailment. An attempt is made to compare their action scientifically, through an exploratory, open clinical study. The main aim of the study is to validate the role of Methika and Chandrashura in the management of Kashtarthava. 40 patients were selected based on inclusion and exclusion criteria, 20 being in each group by random selection. Both the groups were administered with churna of Methika and Chandrasura (3 g internally, twice a day) respectively, for a period of 15 days starting from 5 days prior to menstruation, for 2 cycles and the successive cycle as follow up. The effect was assessed after the treatment time, as well as after follow up. Results showed that both the trial drugs have shown significant action ('p' value- P<0.001) in relieving kashtarthava, among which action of Methika is comparatively superior than Chandrasura when mean values are considered. As per the results it was concluded both Methika and Chandrasura are equally useful in treating Primary Dysmenorrhoea. When mean values are compared, effect of Methika appears to be slightly higher than Chandrasura.

Key words: Chandrasura; Methika; Primary dysmenorrhoea.

***Address for correspondence:**
Dr. Deepa KK,
Lecturer, Dept. of Dravyaguna,
Shri Gulabkunverba Ayurved Mahavidyalaya,
Jamnagar, Gujarat, India – 361 008
E-mail: drdeepanil@gmail.com

Cite This Article

Deepa KK, Shashikant MP. Clinical evaluation of Methika (*Trigonella foenum-graecum* Linn.) and Chandrasura (*Lepidium sativum* Linn.) on Kashtarthava (Primary dysmenorrhoea). Ayurpharm Int J Ayur Alli Sci. 2018;7(1):1-8.

www.ayurpharm.com
ISSN: 2278-4772
Ayurpharm Int J Ayur Alli Sci., Vol. 7, No. 1 (2018) Pages 1 – 8

INTRODUCTION

Women represent the motherhood which suffers from many disturbances naturally which commonly go unnoticed, among which menstrual pain stands most important. Dysmenorrhoea or painful menstruation is one of the most frequent among gynecological complaints as nearly 50% of adult female population (peak at 18-24 years), suffer from this.[1] The disease 'Kashtarthava' is not described in classics as an individual disease entity. Even then it is a symptom of various Yonivyapads (menstrual disorders) especially Udavarta, Vatala, Sannipatika etc. It is a Tridoshaja Vyadhi with Vata predominance.[2] In the present study, primary dysmenorrhoea is selected as it is most common and relevant to the era of changing life styles. Methika (*Trigonella foenum-graecum*) and, Chandrasura (*Lepidium sativum*) show a wide range of therapeutic usage. Their availability and ability to sustain properties even in dry form adds more weight to these studies. Even though we lack direct references; from actions of these drugs- such as vatahara, shoolaghna, arthavashodhaka, sthanyakara, dhathu poshaka etc. we can infer about their effective usage in kashtarthava.[3] A combination of Methika, Chandrasura, Kalajaji and Yavani referred as chaturbeeja is said to be shula hara and garbhasaya vishuddhi kara in Bhava prakasha Nighantu.[4] From this, it becomes clear that Methika and Chandrasura relieve pain and they have special target effect on garbhashaya (uterus) also. Kashtarthava being pain originated from garbhashaya, these drugs are thus inferred to be useful in Kashtarthava. More over that there are many tribal claims about their usefulness in kashtarthava. An ethnobotanical claim also says that, simply chewing Methika along with water relieves spasms and pain experienced during the menstrual period.[5] Similarly, Chandrasura was also used for spasmodic pains especially after delivery.[6] Both of these also acts as galactogogue showing its effect on female reproductive system. Thus, a comparative clinical study is done to evaluate their utility and difference in action.

MATERIALS AND METHODS

Collection and preparation of drug

As both the drugs were easily available, it was collected directly from the farmers of nearby area of Koppa, Karnataka.

Seeds of drug Methika (*Trigonella foenum-graecum*) and Chandrasura (*Lepidium sativum*) were collected from a genuine source, cleaned and pulverized (85 mesh) as per rules of GMP at the quality control laboratory of A.L.N. Rao Memorial Ayurvedic Medical College, Koppa, Karnataka, to obtain fine powder. It was then packed in to 100 gram packets with a measuring spoon.

Determination of Dose

Group A: Methika churna – Oral - 6 g/day- in two divided doses

Group B: Chandrasura churna – Oral - 6 g/day- in two divided doses

Time and Duration of Administration

Trial - for 15 Days - Starting from 5 days prior to expected date of menstruation for two menstrual cycles. Follow up - for one successive menstrual cycle.

Mode of Administration

3 g of churna was taken orally, both morning and evening prior to food along with hot water.

Selection of patients

The unmarried female patients, age groups 14 to 35 was selected to make the study more specific, and also due to the fact that incidence of Dysmenorrhoea was more in this age group,

www.ayurpharm.com
ISSN: 2278-4772
Ayurpharm Int J Ayur Alli Sci., Vol. 7, No. 1 (2018) Pages 1 – 8

and those with any pelvic pathology or Congenital anomalies leading to dysmenorrhoea and patients with other systemic diseases like diabetes and hypertension were excluded.

Grouping and management of patients

The selected patients were allotted into two groups i.e. Methika group and Chandrasura group. Patients of both groups were treated for 15days, starting from 5 days prior to expected date of menstruation, for 2 consecutive cycles, and also one successive cycle for follow up, as advised by experts of stree roga. The effect was assessed after the treatment as well as after follow up.

Inclusion criteria

- Unmarried female patients were selected.
- Patients with in the age group 14 to 35 years.
- Patients suffering from painful menstruation.

Exclusion criteria

- Any pelvic pathology leading to dysmenorrhoea.
- Congenital anomalies leading to dysmenorrhoea.
- Acute infections, acyclic and excessive bleeding for more than 5 days.
- Endometriosis, adenomyosis, uterine fibroid, endometrial polyp and other medical, surgical, neurological, orthopedic conditions resulting in dysmenorrhoea.
- Patients with other systemic diseases like diabetes and hypertension.

Assessment criteria

The patient's response is assessed on the basis of subjective parameters. Pain is the only symptom in primary Dysmenorrhoea. It is assessed based on the activity, area affected, onset and duration, intake of drugs to subside pain etc. Associated complaints considered are Nausea, Vomiting and Fatigue, to quantify the subjective symptom. Activities and drug usage shows the severity, site and duration of pain shows the exact intensity and nature of Dysmenorrhoea, nausea and vomiting again shows the pain is bearable or not and fatigue shows general condition of the patient. Each of the factors here is further graded from zero to three, and total scoring is considered. The scoring pattern is self developed, and approved from the ethical committee in the research centre.

Statistical Analysis

The obtained data were analyzed statistically. The values were expressed as Mean ± SEM. The data were analyzed by paired 't' test and unpaired 't' test as required. The level of $p<0.05$, $P<0.01$, and $P<0.001$ was considered as statistically significant and highly significant respectively. Level of significance was noted and interpreted accordingly.

Drugs and the disease

Methika is having katu and tikta rasa, snigdha guna, ushna veerya and katu vipaka.[7] Chanadrasura is equal in qualities with Methika. Both are having deepana, vatahara and shoolghna properties.[8] In addition fenugreek is a unique herb rich in phyto-estrogens and thus it aids in hormonal production.[9] Primary Dysmenorrhoea may be caused by multiple etiological factors starting from stress to myometrial ischaemia. Imbalance in hormonal levels like Progesterone stimulates myometrial contraction as well as the production of prostaglandin F2 alpha which in turn accentuates pain. Increased sensitivity of myometrium to prostaglandins also can produce incrased myometrial contractions ultimately leading to pain. Due to deficiency of thrombolysin menstrual blood becomes

www.ayurpharm.com
ISSN: 2278-4772
Ayurpharm Int J Ayur Alli Sci., Vol. 7, No. 1 (2018) Pages 1 – 8

clotted. Due to failure of liquefaction clotted blood obstructs the passage of the cervical canal. To expel out those clots uterus contracts vigorously thus painful menstruation arises.[10]

OBSERVATIONS

Homogenous sample was selected- between 18 to 23 years of age, among which 17.5% had positive family history. 30% of patients were suffering from the disease since 1-2 years, 32.5% since 2-4 years, 25% since 4-6 years and 15% since 6-9 years. 22.5% of them had to use mild analgesics while, 32.5% were using strong analgesics to control the pain during menstruation, when they were selected for study. 37.5% had normal condition of digestive fire (agni), 10% had reduced, 20% had aggravated, and 32.5% had irregular digestive fire. 67.5% of them had medium type of koshta, 20% had krura while 12.5% had mrudu koshta. Coming to the type of prakruti (physical constitution based on tridosha), 55% had Pitta-Kapha prakruti, 35% had Vata-Pitta and 15% had Vata-Kapha prakruti. No one had sama prakruti. 65% exhibited medium mental power, while rest 35% had very low mental strength.

Even though painful 67.5% had shown regularity in menstruation while rest had irregular cycles. About 52.5% of patients had menstrual bleeding for 4-6 days, 30% had it for 2-4 days while, 17.5% had bleeding for 6 days and above. Interval of menstruation ranged from 28-33 days, only 10% had it less than 25 days while 2.5% had more than 33 days interval. Majority complained of pain in hypogastric region (75%) low back (62.5%) and leg(67.5%), while 42.5% had iliac pain, 37.5% had sacral pain during menstruation. In 75% pain was spasmodic, 30% it was continuous, in 20% intermittent and in 17.5% dull pain was experienced. 92.5% had pain during menstruation and 45% of them also had pre-menstrual pain. (Graph 1)

RESULTS

Effect of drugs on dysmenorrheal

To know the overall effect of the drugs in Dysmenorrhea, the total score based on observation is calculated and subjected to students paired t-test. (Table 1)

Both the drugs proved significantly effective in dysmenorrhoea after the treatment. The overall condition of the patient has improved significantly in patients with Methika as well as Chandrasura. (Graph 2)

There is no significant difference between action of Methika and Chandrasura in Dysmenorrhoea, but Methika is little superior when the mean values between different groups are compared. (Table 2)

Both of them had shown significant effect after follow up also, which is slightly better than the effect after treatment. There is no statistical difference between values after treatment and after follow up. (Table 3)

Both the drugs are almost equally effective statistically, after follow up treatment. But Methika is superior to Chandrasura in effectiveness on Dysmenorrhoea in overall observation when the mean values are compaired. (Table 4)

Both Methika and Chandrasura are with significant effect on activities. There is a well observable variation in the routine activities of Dysmenorrhoea patients during the administration of drugs. Methika had better action on correction of daily routines in comparison to Chandrasura when mean values are taken in to consideration. The drugs showed a sustained effect after follow up, Methika being more effective on comparison of means.

www.ayurpharm.com
ISSN: 2278-4772
Ayurpharm Int J Ayur Alli Sci., Vol. 7, No. 1 (2018) Pages 1 – 8

Table 1: Effect of drugs on dysmenorrhea

Groups	Mean Scores						
	B.T	A.T	BT-AT	SD	Degrees of freedom	't' value	'p' value
Group A	10.9	3.10	7.80	3.74	19	9.34	P<0.001
Group B	8.55	2.90	5.65	2.56	19	9.87	P<0.001

Table 2: On comparison

BT-AT Group A	BT-AT Group B	SD	Degrees of freedom	't' value	'p' value
7.70	5.65	3.21	38	2.02	P>0.1

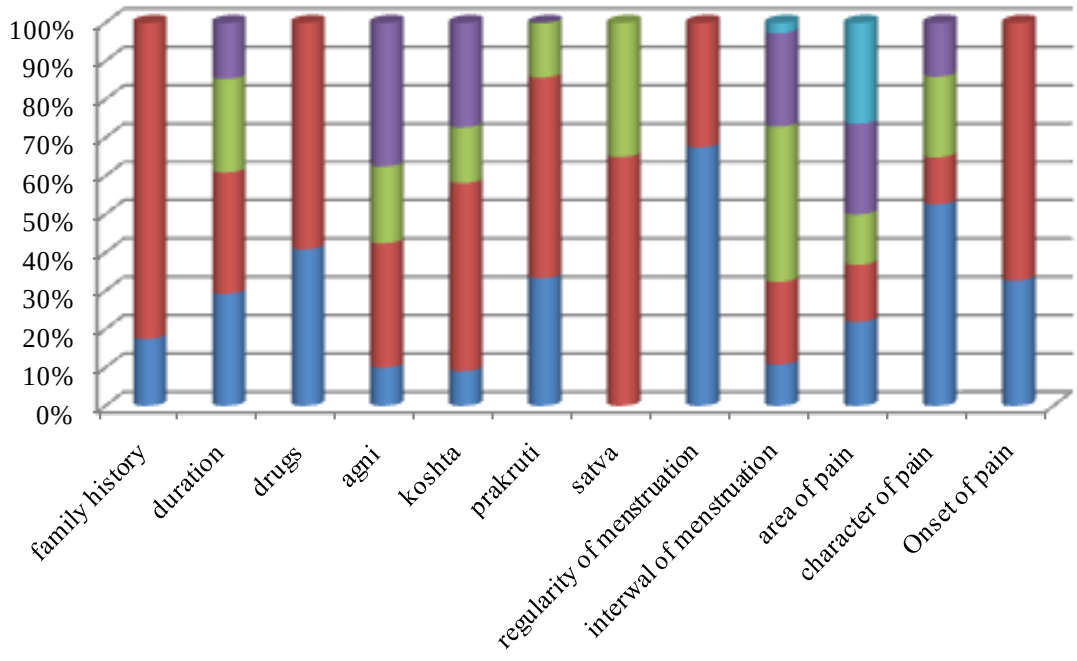
Table 3: After follow up

Groups	Mean Scores						
	B.T	A.F	BT-AF	SD	Degrees of freedom	't' value	'p' value
Group A	10.9	1.50	9.40	4.16	19	10.1	P<0.001
Group B	8.55	1.30	7.25	2.92	19	11.1	P<0.001

Table 4: On comparison after follow up

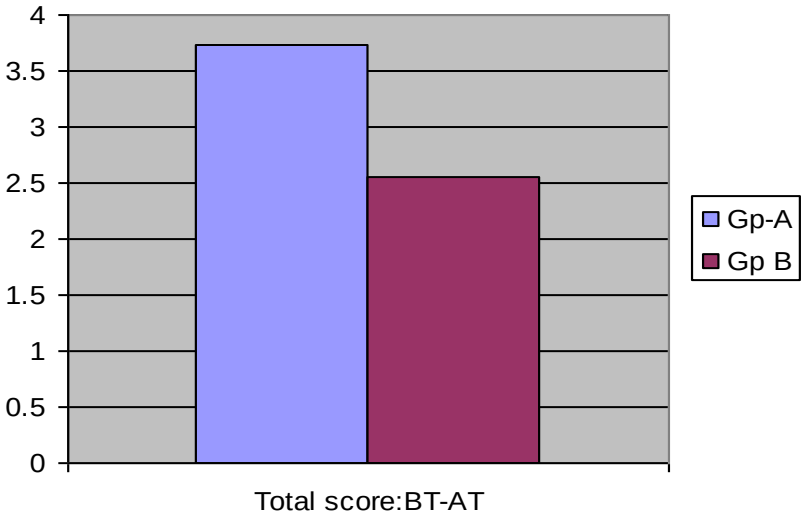
BT-AF Group A	BT-AF Group B	SD	Degrees of freedom	't' value	'p' value
9.40	7.25	3.59	38	1.89	P>0.1

Graph 1: Factors observed in the patients before the treatment starts

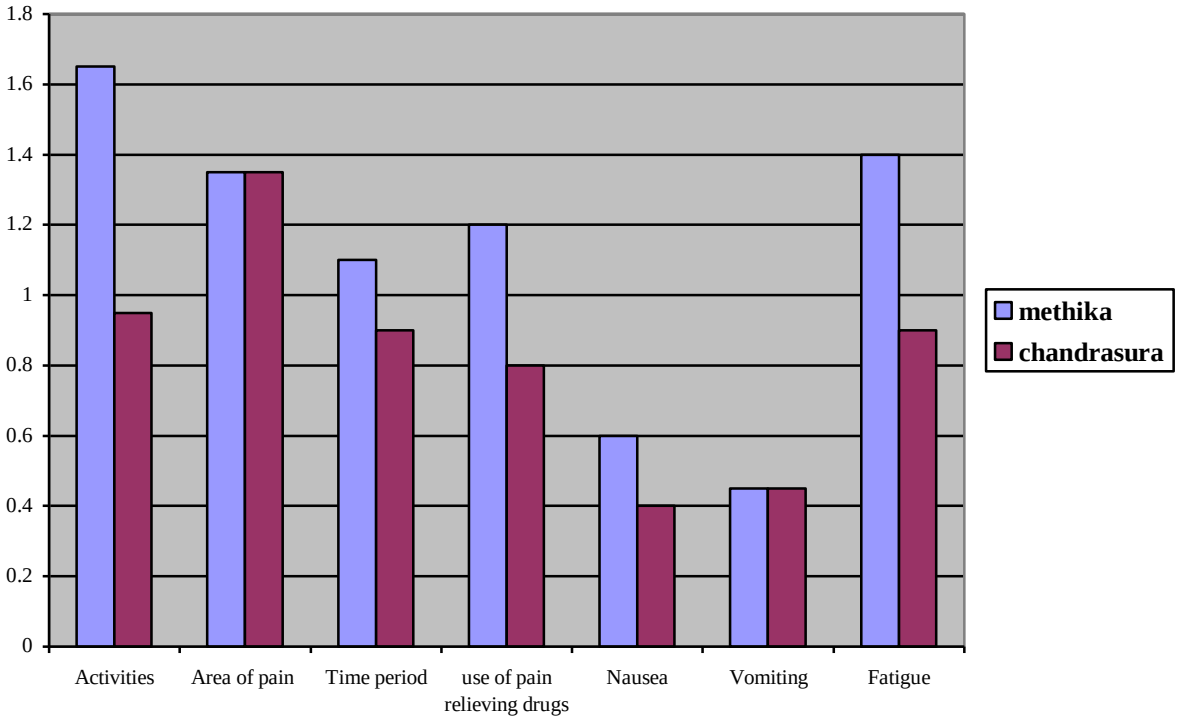


www.ayurpharm.com
ISSN: 2278-4772
Ayurpharm Int J Ayur Alli Sci., Vol. 7, No. 1 (2018) Pages 1 – 8

Graph 2: Effect of drugs on dysmenorrhea



Graph 3: comparison of effect of drugs on individual symptoms of dysmenorrhoea



Similarly, on each parameter, comparative analysis was done such as area of menstrual pain, time duration, usage of medicines for pain relief, nausea, vomiting, fatigue etc. Everywhere, effects of both the drugs are highly significant, Methika showed better action on comparison of mean values. After follow up action is improved. (Graph 3)

DISCUSSION

Among 40 volunteers, maximum was predominant with pitta constitution as they are prone for arthava srotho dushti, next was vata prakruti as they have more affinity for vatika nidanas and vata dushti. When Methika was administered during the secretory phase of menstruation, in 60%-70% cases the period

www.ayurpharm.com
ISSN: 2278-4772
Ayurpharm Int J Ayur Alli Sci., Vol. 7, No. 1 (2018) Pages 1 – 8

was delayed for 1 week or more. This may be due to its phyto-estrogenic activity which alters the level of estrogen and progesterone leading to delay in the fall of estrogen in the body which is the cause for menstruation.

This is not found with Chandrasura. This problem was reduced by giving the medicines just prior to menstruation instead of secretory phase. In the volunteers who continued intake of Methika for about 6 to 8 cycles Dysmenorrhoea was not found even after stopping it, for a long time. But with Chandrasura, this long term effect was not observed. Majority of the volunteers who complained of menstrual blood clots found it being reduced during the administration in both groups, especially in group Methika.

In all the 7 factors considered here, Methika and Chandrasura shows significant effect on the condition of Dysmenorrhoea individually. Not only in the overall effect, on each symptom also had drugs proved useful. Their effect is increased after follow up therapy. Even though not statistically significant, Methika shows a better effect in relation to Chandrasura when we compare between the means of the group in symptoms like activity, area of pain, duration of pain etc.

Only with area of pain (after follow up) Chandrasura shows a little higher value. In nausea and vomiting their action is equivalent. (Graph 3)

By kapha vata haratva Methika can mitigate, the most predominant nidanas of Dysmenorrhoea. Being katu and tikta in taste, ushna in potency etc. it cures agni mandya and amotpatti. By kapha haratva, ushnatva and katutva it removes obstruction, which is kaphaavarana and sanga (block) of arthava vaha srothas. There by it avoids upalepa (thickening, leading to blockage) to the arthava vaha srotas. By vataghnata and shulaghna effect it directly acts against pain in koshta. The property of Vatanulomana corrects the path of apana vata and expels it out from koshta. This again helps in relieving koshta gata vata. In addition poshaka and dhatu vardhaka action cures dhatu kshaya and vata vruddhi. Methika is proved to be analgesic and anti inflammatory.[11] Thus it has a direct effect on prostaglandin release and there by Dysmenorrhoea.

The chemical diosgenin and trigonellin primary constituent of Methika considered as phyto estrogen causes variation in the release of estrogen and progesterone in the body directly or indirectly leading to regulated uterine contractions and controlled release of prostaglandins, there by the pain. Antispasmodic and spasmolytic activity of Methika relieves excessive muscular contractions further leading to reduction in pain. The ability of Methika to prevent platelet aggregation and reduce blood viscosity causes liquefaction of menstrual blood clots and prevents their further formation. This avoids extensive contractions which is another important cause of Dysmenorrhoea.

Chandrasura is also Ushna, katu, tikta and exhibits similar actions in the body as Methika it acts as amahara, kapha vata hara and agni vardhaka. By raktha shodhaka effect, it removes toxins from raktha, clears upadhatus also by removing ama from it. By shulaharatva it has direct effect on pain. Chandrasura is acting in Dysmenorrhoea by its analgesic and anti-spasmodic effect. It controls uterine contractions by emmenogogue and spasmolytic property.[12]

When mean values are considered, the action of Methika was found to be superior to Chandrasura even though there was no statistical difference in their action. This may be due to the additional property of estrogenic effect with Methika. The same may be the reason for its prolonged effect as well as less reoccurrence. Similarly, its ability to dissolve menstrual clot also makes it superior.

www.ayurpharm.com
ISSN: 2278-4772
Ayurpharm Int J Ayur Alli Sci., Vol. 7, No. 1 (2018) Pages 1 – 8

CONCLUSION

Clinical study shows that, both Methika and Chandrasura are equally useful in treating Primary Dysmenorrhoea. When mean values are compared, effect of Methika appears to be slightly higher than Chandrasura. There is no any harmful effect found with both the drugs during the study, hence can be considered as a safer remedy for kashtarthava.

REFERENCES

1. Dutta DC. Text book on Gynecology. 2nd ed. Varanasi: Jaypee Brothers Medical Publishers; 2013. p.174, 175.
2. Tiwari P. Ayurvediya prasooti tanthra evam stree roga, Vol. 2. 1st ed. Varanasi: Chaukhamba publications; 2009. p.35, 70, 143, 150, 244, 315, 316.
3. Sharma PV. Dravyaguna vignanam, Vol. 2. 1st ed. Varanasi: Chaukhamba Sanskrit Pratishthan; 2013. p. 823-824.
4. Chunekar KC. Bhavaprakasha Nighantu. 1st ed. Varanasi: Chaukhamba Bharati Academy; 2015. p. 37-39.
5. Kirthikar KR, Basu BD. Indian Medicinal Plants, Vol. 1. 2nd ed. Dehradun: Bio-Green Books; 2012. p. 690, 699, 700.
6. Kirthikar KR, Basu BD. Indian Medicinal Plants, Vol. 1. 2nd ed. Dehradun: Bio-Green Books; 2012. p.142, 173, 174.
7. Vaidya BG. Nighantu adarsha, Vol. 1. 1st ed. Varanasi: Chaukhamba Bharati Academy; 2013. p. 411,412.
8. Lucas DS. Dravyaguna Vignanam, Vol. 2. 1st ed. Varanasi: Chaukhambha Visvabharati; 2013. p. 469-470.
9. Sreeja S, et. al. In vitro estrogenic activities of fenugreek (*Trigonella foenum graecum*) seeds. The Indian Journal of Medical Research, 2010;131:814-819.
10. Kwon JS, Reid RL. Dysmenorrhoea. J Soc Obstet Gynaecol Can. 1997;19:955-962. Retrieved from: http://www.jogc.com/article/S0849-5831(16)30926-0/pdf [Accessed on: 12/11/2017]
11. Vyas S, et al. Analgesic and anti-inflammatory activities of *Trigonella foenum-graecum* (seed) extract. Acta Poloniae Pharmaceutica ñ Drug Research, 2008;65(4):473-476.
12. Indumathy R, Aruna A. Cytotoxic Potential of various extracts of *Lepidium sativum* (Linn.) An In-vitro Evaluation. International Journal of Pharmacology and Pharmaceutical Sciences 2015;2(5):1-5.

Source of Support: Nil Conflict of Interest: None Declared