

Evaluation of Effect of *Trachyspermum ammi* Extract on Primary Dysmenorrhoea

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ABSTRACT

Dysmenorrhoea is the most common problem seen in reproductive age of women. Often it hampers a woman's daily routine during the menstrual phase. In Ayurveda system of medicine there are many effective herbal remedies used for the menstrual problems, *Yavani* – *Trachyspermum ammi* is one among them. Present study was aimed to evaluate efficacy of aqueous extract of *Yavani* on Primary dysmenorrhoea. Where a group of 15 female patient of reproductive age group with primary dysmenorrhoea were selected and administered with Aqueous extract of *Yavani* for 3 days during menstruation. Evaluation was done before and after the treatment on parameters such as VAS, duration and intensity of pain, Episodes of Nausea, vomiting etc. Where after medication significant relieve found on VAS, Pain duration and intensity. *Trachyspermum ammi* can be an effective herbal remedy for the management of Primary dysmenorrhoea.

Keywords : Dysmenorrhoea, Ayurveda, *Trachyspermum ammi*, *Yavani*

Introduction

In present era a woman play a pivot role in the society. Now women are contributing in both aspect - as a working woman and a home maker. But some physiological problems can trouble enough the woman to drag her down from the race. Menstrual pain is the leading one among them.

Dysmenorrhoea is one of the most common problem in female of reproductive age. Dysmenorrhoea is categorized into Primary and secondary dysmenorrhoea where primary dysmenorrhoea is considered menstrual pain without any other pelvic pathology. Majority cases of dysmenorrhoea fall in to the group of primary dysmenorrhoea. A systematic review of studies in developing countries found that approximate 50 % of adult women, and about 75 % of adolescents, experienced pain with menstruation, with 5 - 20 % reporting severe dysmenorrhea or pain which prevents them from participating in their usual activities.¹ Its prevalence is higher up to 5-15% more in intelligent, sensitive and stressful working class women.^{2,3}

In Ayurvedic classics *Yavani* - *Trachyspermum ammi* is mentioned with pain reduction property.^{4,5,6,7} *Yavani* (*Trachyspermum ammi*) is used for dysmenorrhoea in Indian folk lore practice since long ago. *Trachyspermum ammi* contains various phytochemical constituents mainly carbohydrates, glycosides, saponins, phenolic compounds, volatile oil (thymol, γ -terpinene, para-cymene, and α - and β -pinene).⁸ The volatile oil mainly contain thymol which has antispasmodic efficacy. In general practice *Trachyspermum ammi* mainly used for

Gastrointestinal tract problems but not in dysmenorrhoea. Hence this study was conducted to evaluate effect of aqueous extract of *Trachyspermum ammi* for the management of Primary Dysmenorrhoea in systemic way.

Aim and Objective:

- To evaluate effect of *Trachyspermum ammi* extract on primary dysmenorrhea

Materials and Methods:

- **Subjects:** A group of 15 female patients of reproductive age group diagnosed with Primary Dysmenorrhoea were selected for the study.
- **Sample size:** 15
- **Study design :** Single arm clinical trial
- **Site for the study:** Prasuti Tantra & Streeroga department, Parul Institute of Ayurveda & Research, Khemdas Ayurved Hospital, Vadodara

Study design:

A single group clinical study include minimum of 15 patients diagnosed with primary dysmenorrhea were selected and administered with *Yavani Arka* - the aqueous extract of *Trachyspermum ammi* -5 ml with 100 ml water- three times per day orally for first 3 days of menstruation.

Follow up treatment: for next 2 consecutive cycles.

Intervention

Aqueous extract of *Trachyspermum ammi* (*Yavani Arka*).⁹ Method of preparation was adapted as per Ayurved Formulary of India.

Inclusion criteria:

- Patients with age group of 14 to 45 years.
- Patients complaining painful menstruation at least two consecutive cycles.
- Patient having regular menstrual cycle.

Exclusion criteria

- Acute infection,
- Acyclic and excessive bleeding more than 4 pads/day or more than 5days.
- Any pelvic pathology leading to dysmenorrhoea
- Intra Uterine Contraceptive Device induced painful bleeding
- All secondary causes leading to dysmenorrhoea

Result:

| Variables | N | BT- | AT- | DIFF | Paired t test |
|-----------|---|-----|-----|------|---------------|
|-----------|---|-----|-----|------|---------------|

| | | MEAN | MEAN | D | SD | SE | t | P |
|-------------------------|----|--------|--------|---------|--------|--------|--------|-------|
| VAS | 15 | 3.6667 | 1.1333 | 2.81930 | 0.5164 | 0.1333 | 19.000 | 0.000 |
| Duration of Pain | 15 | 3.0000 | 1.0667 | 2.18682 | 0.4577 | 0.1182 | 16.358 | 0.000 |
| Anorexia | 15 | 2.6667 | 1.0000 | 2.20710 | 0.9759 | 0.2519 | 6.614 | 0.000 |
| Nausea | 15 | 2.4667 | 1.0000 | 1.87825 | 0.7432 | 0.1919 | 7.643 | 0.000 |

The statistical analysis reveals the mean score of Visual analogue scale- VAS heart rate before and after the treatment. Mean score was 3.6667 before and after the treatment for 3 cycle it was reduced to 1.1333 with P value 0.000(<0.001) showing highly significant result. Mean score of Duration of pain before treatment was 3.0000 and after treatment decreased to 1.0667 with P<0.001. Similarly in episode of anorexia Mena score before treatment was 2.6667 and after treatment 1.000 with P<0.001 and in complaint of nausea during menstruation before treatment mean was 2.4667 and after treatment mean was 1.000 with P<0.001. Hence the result indicates that the treatment with *Yavani Arka* -aqueous extract of *Trachyspermum ammi* provides significant result on the variables such as VAS, Duration of pain, anorexia, Nausea.

Discussion:

Trachyspermum ammi (*Yavani*) is an Ayurvedic remedy used for the treatment of gastrointestinal disorders and respiratory problems since long ago. Previous studies shows that possesses stimulant, antispasmodic and carminative properties.

Medicinally, it has been proven to possess various pharmacological activities like antifungal¹⁰, antioxidant, antimicrobial¹¹, antinociceptive, cytotoxic, hypolipidemic, antihypertensive, antispasmodic, broncho-dilating actions, antilithiasis, diuretic, abortifacient, antitussive, anthelmintic and antifilarial.¹²

Seeds contain essential oil with 50% thymol as main ingredient which act as strong germicide, anti-spasmodic and fungicide.¹³ Thymol is volatile contain. Hence in this study dosage form extract was used. As compared to other dosage form aqueous extract has easy absorbability hence it can provide rapid result with small quantity. Further, studies reveal presence of various phytochemical contents including carbohydrates, glycosides, saponins, phenolic compounds, volatile oil (thymol, γ -terpinene, para-cymene, and α - and β -pinene), protein, fat, fiber and mineral matter containing calcium, phosphorous, iron and nicotinic acid.^{14,15} These studies reveal that *T. ammi* is a source of medicinally active components and have various pharmacological effects; hence, it is encouraging to find its new therapeutic uses. Present study was conducted to evaluate efficacy of *Yavani Arka*- Aqueous extract of *Trachyspermum ammi* on dysmenorrhoea which is not primarily used in current clinical practice. The study indicates that *Yavani Arka* can provide effective relief on the symptoms of primary dysmenorrhoea.

Trachyspermum ammi (Yavani) is easily available in local market, and Preparation method of extract is feasible and cost effective. In present study on dysmenorrhoea the aim was to provide an effective, feasible and cost effective Ayurvedic remedy, with better absorbability in feasible dosage form.

Conclusion: *Trachyspermum ammi* extract provides encouraging result for the management of primary dysmenorrhoea hence it can be an effective herbal remedy without any adverse effect.

Limitation and Further Studies: Present study was done with small sample size as pilot study. With large sample size more accuracy of the result can be obtained. As in this study result is encouraging further study with large sample size will be continued.

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