



“A CLINICAL STUDY ON UPAPLUTA YONIVYAPAD W.S.R TO VULVOVAGINITIS DURING PREGNANCY AND ITS MANAGEMENT WITH PANCHAVALKALADI VARTI”

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Abstract

Vulvovaginitis during pregnancy may be considered under the umbrella of *Upapluta Yonivyapad*. Total 29 patients in the age Group of 19-40 years suffering from vulvovaginitis during pregnancy were registered for the study among which 27 completed the course of treatment. The selected patients were randomly allotted in to two Groups. *Panchvalkladi Varti* (1gm twice a day for 14 days) was selected as a Trial Group and Clingen (Clotrimazole-100 mg and Clindamycin100 mg once a day for 14 days) vaginal suppository was selected as a Control Group for local application (in vagina). Highly significant results were seen in symptoms in both the Groups, and on comparing the results in the two Groups we found that the results were almost equivalent. In Group A, complete relief was observed in 25% of the patients; in Group B, marked improvement was observed in 60% of patients.

Key words: Vulvovaginitis, *UpaplutaYonivyapad*, *Panchvalkaladi Varti*, Clingen vaginal suppository

Introduction

Upapluta Yonivyapad (Vulvovaginitis) is described by *Acharya Charaka*^[1] and both *Vagbhatts*^{[2],[3]}. Both *Vagbhatts* have almost given the same description but have not restricted it to pregnancy only. On the contrary, *Charaka* has clearly mentioned that it is only a disease of the pregnant woman. Amongst various meaning of word “*Upapluta*” means “over flowed”, “invaded” or “afflicted”^[4].

According to *Acharya Charaka*, when a pregnant woman consumes diet or indulges in mode of life capable of vitiating *Kapha* and also suppresses desire of vomiting and inspiration, then her agitated or vitiated *Vayu* withholding *Kapha* reaches *Yoni* (vagina) to produce abnormalities. Due to this, there is either yellowish vaginal discharge associated with pricking pain or white mucoid discharge. Afflicted with features of *Kapha and Vata*, this condition is known as *Upapluta Yonivyapad* (Vulvovaginitis).^[5]

Upapluta Yonivyapad (Vulvovaginitis) is caused by vitiation of *Vata & Kapha*. In general, the features of *Upapluta Yonivyapad* are similar to that of Vulvovaginitis in modern science. Both these disease are characterized by yellowish or white mucoid vaginal discharge associated with pricking pain, itching etc. in the vagina. One study showed a miscarriage rate of 31.6% in women with bacterial vaginosis compared with 18.5%, a normal background rate, in women with normal vaginal bacteria^[6]. The highest attack rate of vulvovaginitis during pregnancy is seen in the 3rd trimester.^[7]

In the present study *Panchavalkaladi Varti* was selected for the local application as referred from the *Ashtanga Samgraha Samhita*. Most of the drugs of this *Varti* (suppository) have *Kashaya Rasa*, *Ruksha Guna* and *Kapha Dosha Nashaka*, *Vranashodhana*, *Vranaropana* (wound healing), *Vedanasthapana* (analgesic), *Shothahara* (anti inflammatory) and *Dahaprashamana* properties. They have been reported to exert astringent, analgesic, anti-inflammatory, antimicrobial, antiprotozoal and antifungal properties.

Aims and objectives:

1. To assess the efficacy of Trial drugs *Panchavalkaladi Varti* in the management of Vulvovaginitis during pregnancy.

- To compare the efficacy of both the selected drugs in the management of vulvovaginitis during pregnancy.

Materials and methods:

Selection of patients

Patients were selected from the OPD and IPD for present study. We used simple random sampling for selecting the subject for the study.

Inclusion criteria:

- After completion of first trimester of pregnancy with complaint of white discharge, itching and burning sensations etc.
- Age 19 to 40 years irrespective of parity
- White discharge present during examination
- Inflammation, redness present in vulva and vagina
- Pathogens present in wet vaginal smear

Exclusion criteria:

- Age below 19 yrs or above 40 yrs, with non specific vulvovaginitis.
- Women with severe physical illness, any organic pathology, hepatic, cardiac, renal disease and any acute infection of any system.
- Women suffering from any systemic disease like Diabetes, T.B., S.T.D. and H.I.V. etc.
- First trimester of pregnancy.

Laboratory investigations:

All selected patients were subjected to routine and specific investigations, which included the following.

- Routine haematological examination - Hb, T.L.C., D.L.C., E.S.R., VDRL, H.I.V. etc.
- Random blood sugar
- Routine and microscopic examination of urine
- Wet vaginal smear
- Gram staining
- Vaginal pH

Grouping/Dose/Duration of treatment

Group	Drug	Method	Duration
Trial Group A	<i>Panchavalkaladi Yoga (Varti form)</i> <i>Panchavalkaladi kwatha + Glycerine + Gelatin</i>	Locally (into vagina) 1 Varti (1 gm) B.D.	14 days
Control Group B	Clotrimazole - 100 mg, Clindamycin 100 mg. (Clingen vaginal suppository)	Locally (in to vagina) 1 tab O.D.	14days

Method of administration of *Yoni Varti*:

- Patients were advised to empty the bladder and clean the vaginal area with water.
- Then asked to lie on her back with flexed thighs and insert the *Varti* (suppository) deep into vagina (Posterior Fornix).

Follow -up study:

All patients were followed up for one month.

Criteria for assessment

Subjective Criteria:

The effect was assessed on the basis of improvement in signs and symptoms of disease on patients.

Objective Criteria:

- Changes in the pH.
- Disappearance of fungus, gram negative bacteria and gram positive bacteria present in wet vaginal smear.

Subjective Criteria:

The efficacies of the drugs were judged on the basis of the scoring pattern described as below.

Scoring for different signs and symptoms

1. <i>Yoniatah Srava</i> (White discharge per vagina)	
<input type="checkbox"/> No c/o discharge	0
<input type="checkbox"/> Slight discharge, Occasional discharge and Only vulval moistness.	1
<input type="checkbox"/> Moderate discharge and Staining of undergarments but area of staining less than 10 cm square	2
<input type="checkbox"/> Severe discharge ,Staining area more than 10-20 cm square or patient needs use of pad	3
2. Smell	
Non-offensive	0
Foul smell is felt only while performing P/S	1
Foul smell felt from a short distance	2
The observer unable to stand near the patients.	3
3. <i>Yoni Kandū</i> (Itching vulva)	
No itching	0
Occasional Mild, feeling of irritability, No need of medicine	1
Moderate Increase after specific time (Menstruation, Micturation) Disturbs daily routine, Need of medicine and relief after medicine	2
Constant Severe, Affects routine activity, No relief after taking medicine	3
4. <i>Yoni Daha</i> (Burning sensation)	
No <i>Daha</i>	0
Mild <i>Daha</i> Little, localized & some time feeling of burning sensation	1
Moderate <i>Daha</i> More, localized & often burning sensation which does not disturb sleep	2
Severe <i>Daha</i> Continuous, interference with daily routine activity	3
5. <i>Yoni Vedana</i> (Pain)	
No pain	0
Localized feeling of pain during movement only but no feeling during rest	1
Localized feeling of pain even during rest but not disturbing the sleep	2
Localized continuous feeling of pain, radiating & not relieved by rest	3
6. <i>Katishoola</i> (Low backache)	
Occasional pain Manda, Only feeling of discomfort	0
Mild pain At special time of menses with excessive work load, intercourse. No interference with daily routine	1
Moderate pain Continuous, No relief after taking medicine, Interference with daily routine	2
Severe pain <i>Tivra shoola</i> , No relief after taking medicine Interference with daily routine	3
7. <i>Mutra Daha</i> (Burning Micturition)	
Absent	0
Occasiona	1

Mild bearable Daha	
Moderate troublesome Daha	2
Severe <i>Daha</i> not tolerable Patient wants to avoid Micturition.	3
8. During examination local tenderness	
Absent	0
Only with compression	1
With deep compression	2
Severe (by touch)	3
9. Vulvitis (Inflammation of vulva)	
No inflammation on vulva	0
Very less inflammation / redness found on vulval edges	1
Redness and raise in temperature in surrounding area	2
Redness raised temperature all around the vulva but no loss of function	3
10. Vaginitis (Inflammation of vagina)	
No inflammation on vagina	0
Very less inflammation / redness found on vaginal walls	1
Redness and raise in temperature in surrounding area	2
Redness raised temperature found all around the vagina but no loss of function	3

Objective criteria:

Assessment of the therapy was also carried out by comparing the B.T. and A.T. values of microscopic investigations of wet vaginal smear.

Wet vaginal smear reading scoring:

To assess the effect of therapy following scoring pattern was prepared:

1. Based on fungal hyphae	
Occasional	0
Few	1
Many	2
Plenty	3
2. Based on Trichomonas vaginalis organism	
No organism seen/field	0
1-5 organism seen/field	1
5-10 organism seen/field	2
More than 10 organism seen/field	3
3. Based on Gram positive/Gram negative Bacteria	
Occasional	0
Few	1
Many	2
Plenty	3

General Evaluating Scale

- 0 Absence of symptoms
- 1 Mild
- 2 Moderate
- 3 Severe

Criteria for the assessment of overall effect of the therapy:

The total effect of treatment was assessed in the terms of cured, Marked, Moderate improvement,

Mild improvement, and no changes.

Overall effect of the therapy

Complete remission	100% relief in the signs and symptoms
Marked improvement	Above 76%
Moderate improvement	51-75% relief in the signs and symptoms
Mild improvement	26-50% relief in the signs and symptoms
No change	less than 25% changes in the signs and symptoms

Observations

The study was conducted on 29 patients who were randomly allotted in to two Groups

Number of patients			
	Group A	Group B	Total
Registered	14	15	29
Completed	12	15	27
Discontinued	2	0	2

In the series of 29 patients with *Upapluta yonivyapad* (Vulvovaginitis), 68.96 % of the subjects were from the age group of 20 to 25 years. 34.48 % of patients were having gestational age between 29 weeks to 32 weeks. 51.73% of patients were primigravida and 48.27% of patients were multigravida. 65.52% of patients were found unhygienic and 34.48% of patients were found hygienic. 82.76% of patients were house wives, 10.35% were labourers and 6.89% were engaged with government service. Socioeconomically 51.73% of patients were poor and 31.03 % patients were from middle class. 68.96% of patients complained of constipation. 68.96% of patients had burning micturition. 72.41% of patients had the history of frequency of intercourse 1-2 times per week. All of the patients were having *Rasavaha Srotodushti*, 93.10% of patients were having *Mamsavaha Srotodushti*, 75.86% of patients were having *Mootravaha Srotodushti* and 72.41% of patients were having *Raktavaha Srotodushti*. *Nidana* factors (causes) like *Vishmasana* (irregular dietary habits) were present in 44.82 % of patients, *Snigdha Ahara sevana* (oily foods) in 34.48% of patients, *Guru Ahara Sevana* (intake of foods which take longer time for digestion) in 75.86% of patients, *Madhura Ahara Sevana* (sweet predominant food) in 78.86% of patients. *Ratrijagarana* (night awakening) was observed in 37.93% of patients. Among the *Manasika Nidana* factors, *Chinta* (worry) was observed in 48.27% of patients.

Yoni srava (white discharge per vagina) was present in 100% of patients, *Yoni Kandu* (itching vulva) was present in 72.41% of patients, *Yoni Daurgandhya* (foul smell) was present in 62.07% of patients, 13.79% of patients had complaint of *Yoni Vedna* (pain in vagina), 24.13% of patients had complaint of *Yoni Daha* (burning sensation in vagina) and *Yoni Pichichhilita* (stickiness). *Dadhivat Srava* (curdy discharge) was present in 55.15% of patients, *Pandupichichhil Srava* (pale white discharge) was present in 24.13% of patients and *Pooyabha Srava* was present in 20.68% of patients. *Mootradaha* (burning micturition) was found in 72.41% of patients, *Dyspareunia* and *Katishool* (back ache) was found in 68.96 % of patients. 6.89 % of patients had mild vaginal discharge, 72.42% had moderate vaginal discharge and 20.69 % had severe vaginal discharge. In wet vaginal smear fungal hyphae were found in 58.62 % of patients, gram positive bacteria were found in 31.03% of patients and gram negative bacteria were found in 89.65% of patients. On per speculum, vulvitis was found in 82.75% of patients, vaginitis was found in 100% of patients and urethritis was found in 72.41% of patients.

Results

The obtained data on the basis of observations was subjected to statistical analysis in terms of mean, standard deviation and standard error by applying paired and unpaired 't' test. The results were interpreted at the level of $P < 0.001$ as highly significant, $P < 0.05$ or $P < 0.01$ as significant and $P < 0.1$ or $P > 0.01$ as insignificant.

Effect of therapy

As shown in [Table 1] Group A showed highly significant result ($P < 0.001$) in *Yoni srava* (white discharge per vagina), *Yoni Pichichhilata* (stickiness), *Yoni Kandu* (itching vulva) and *Yoni Daurgandhya* (foul smell),

whereas there was insignificant result ($P > 0.05$) in *Yoni Daha* (burning sensation in vagina) and *Yoni Vedana* (pain in vagina). As shown in [Table 2] Group B showed highly significant result in all the cardinal features. As the [Table 3] shows, in Group A there was highly significant relief ($P < 0.001$) in all the associate features. Group B showed highly significant relief ($P < 0.001$) in all the associate features. [Table 4]

Both Group A and Group B showed highly significant ($P < 0.001$) result in fungus, gram positive and gram negative bacteria in the case of vaginal pH, where the change was statistically insignificant ($P > 0.05$). [Table 5 & Table 6]

Group A and Group B showed highly significant ($P < 0.001$) result in vulvitis and vaginitis. [Table 7 & Table 8]

When compared through the unpaired 't' test, the difference between the two Groups was not significant statistically. *Yonirava* (white discharge per vagina) was one of the cardinal symptoms of *Upapluta Yonivyapad* (Vulvovaginitis), which was relieved by 79.9% in Group A patients and 80% in Group B patients. This improvement, when compared using the unpaired 't' test, did not show any difference between the two Groups. *Yoni Kandu* (itching vulva) is another symptom of *Upapluta Yonivyapad* (Vulvovaginitis), 82.60% improvement was observed in the symptom of *Yoni Kandu* (itching vulva) in Group A patients, while Group B patients showed 83.33 % of relief. When given for the unpaired 't' test this difference was not statistically significant. 100 % relief was found in the symptom of *Yoni Daha* (burning sensation in vagina) and *Yoni Vedna* (pain in vagina) in both the Groups this difference was not statistically significant. Group B showed better percentage of relief i.e. 100% while comparing with the Group A i.e. 86.66 % to relieve the symptom Dargandhya (foul smell). This comparative data is not statistically significant. Thus Group A and Group B were equally effective in managing all the cardinal feature of the disease. *Katishool* (back ache) is one of the associate features of *Upapluta Yonivyapad* (Vulvovaginitis), 80% relief was observed in Group A, while in Group B 76.66% relief was observed. The unpaired 't' test showed equal efficacy of Group A (Trial Group) and Group B (Control Group) in the regard as the difference was not statistically significant. In case of the symptom of *Mutradaha* (burning micturition), 91.66% improvement was observed in Group A whereas in Group B 84.21% improvement was observed; the difference between the two Groups was not significant statistically. [Table 8]

Improvement in vulvitis was observed by 69.56% in Group A patients, while in Group B patients 84.64% relief was observed, When given for the unpaired 't' test this difference was not statistically significant. 80% improvement was observed in vaginitis in Group A patients while in Group B patients 82.24% relief was observed. As per the unpaired 't' test, this difference was not statistically significant one. Thus Group A and Group B were equally effective in vulvitis and vaginitis. In vaginal pH 21.64 % relief was observed in Group A, whereas in Group B 1.29 % relief was observed. By using unpaired 't' test, this difference was statistically highly significant. In case of gram positive bacteria 66.66% relief was observed in Group A patients and 83.33% relief was in Group B patients. When given for the unpaired 't' test this difference was not statistically significant. Gram negative bacteria are one of the important causative agents of the disease, 65% relief was observed in Group A patients and 69.9 % relief was observed in Group B patients. The unpaired 't' test showed the equal efficacy of both the drugs in dealing with the same. [Table 9]

Overall effect of therapy

As shown in Table 10, in Group A 25% of patients got complete remission, 33.33 % of patients got marked improvement, 8.33% of patients got moderate improvement, and 25% of patients got mild improvement & 8.33% of patients remained unchanged.

In Group B 6.66 % of patients got complete remission, 60 % of patients got marked improvement, 26.66 % of patients got moderate improvement, and 6.66 % of the patients got mild improvement. None of the patient remained unchanged.

Discussion

Selection of the disease

Vulvovaginitis is the most common condition seen by the obstetricians requiring primary care for the pregnant women. It is an inflammatory condition of vulva and vagina and characterised by vaginal discharge, pain, itching, which are its most common symptoms and is accompanied by sign of vulval

irritation such as erythema and excoriation of the vulval skin ^{[8][9]}. The lower genital tract of the pregnant woman harbours many fungi, bacteria as the commensals, which survive without producing any symptomatic illness ^[10]. However bacterial and fungal infections of the genital tract are increased due to increase in cell glycogen and reduced pH under the influence of higher blood level oestrogen ^[11]. Due to increased vaginal acidity & increased glycogen content pregnancy favours infections of the lower genital tract ^[12]. If these infections are not treated, then they may spread to the choriodecidual tissue through the cervical canal resulting in the premature rupture of membrane, preterm labour ^[13] low birth weight, pregnancy loss, and spontaneous abortion, post abortion and post pregnancy infection. ^[14] Treatment modality in the Allopathic medicine includes antifungal, antibacterial, antiprotozoal, etc drugs. But all have unsatisfactory results. They also have some side effects like local burning, irritation, rashes and hypersensitivity ^[15].

So, there is a great scope for research to find out a safe, potent, effective and less costly remedy of *Ayurveda* for the management of Vulvovaginitis in pregnancy.

Selection of drug

The use of any medication in pregnant woman requires careful consideration of benefit to the mother versus risk posed to the fetus. In condition of Vulvovaginal infection in pregnancy, local route is to be better as compare to oral, because the high concentrations are attained at the desire site without exposing the rest of body ^[16]. Many common drugs that are contraindicated in pregnancy as they can cause harm to the fetus. Many of systemic drugs are capable of penetrating the placental barrier and entering fetal cord blood, therefore adverse effects of these drugs on the fetus are a valid concern. It also causes many side effects like nausea, burning sensation, headache, rashes and gastric discomfort etc. ^[17]

In the present study, Panchavalkaladi Varti was selected for the local application as referred from the Ashtanga Samgraha ^[18]. These drugs are mentioned in the *Ayurvedic* Classics in *Pichu* (tampon) form. But, it is not a very convenient form to be taken by the patients. It is difficult to decide the dose of drug in *Pichu* (tampon) form. Occasionally a *Pichu* (tampon) may be inadvertently forgotten for few days; a serious condition called 'Toxic Shock Syndrome' can develop due to this mistake.

Observations

68.96 % of the Patients were from the age group of 20 to 25years. . This indicates that this disease is a common problem of active reproductive life ^[19]. 34.48 % of patients were having gestational age between 29 weeks to 32 weeks. In a study Coch. et al, reported that the highest attack rate of candida vulvovaginitis during pregnancy is seen in the 3rd trimester. The third trimester prevalence rate was identical to the rate found in 26 to 32 wks gestation. According to *Acharya Charaka*, 5th month onwards Garbhini (pregnant woman) becomes emaciated, suffers from loss of strength and feels excessively exhausted ^[20]. It is due to lack of nourishment of maternal Dhatus as the Rasa is driven to nourish more and more the flesh and blood of foetus. 65.52% of patients were observed unhygienic, when the genital area is not kept clean, the number of Infectious microorganism increases, making Vulvovaginal infections more likely. The study revealed that most of the patients in both the Groups belonged to lower socio-economical status. These people cannot get proper diet and hygienic environment. So the chances of malnutrition are higher in lower class. It produces anaemia, low immunity etc. which are general causative factor. Poverty, poor hygiene and bad sanitation are also the factors for Vulvovaginal infection. *Mandagni* (low digestive power) was observed in 34.48% of patients. *Upapluta Yonivyapad* (Vulvovaginitis) is caused due to vitiated *Kapha Dosha*. Vitiated *Kapha* and *Amavastha* are very common due to *Mandagni* (low digestive power). In present study maximum patients had complaint of constipation, during pregnancy factors that contribute to constipation include decrease in physical activity, oral Iron supplementation, and voluntary suppression of the reflex to defecate. Majority of patients were having burning micturition, it may be due to spread of Vulvovaginal infection up to the urethra. On considering the data of sexual history about frequency it shows that majority of the patients had frequency of intercourse 1- 2 times/week. It is mentioned in *Ayurvedic* classics that *Atimaitihuna* (excessive sexual intercourse) is one of the very important causative factor for all *Yonivyapad* and during pregnancy it is prohibited by *Acharayas* ^[21]. In present study data revealed that all patients had *Rasavaha srotodushti*, it is well known that Rasa Dhatu nourishes the body. The nutrition to fetus is by Rasa Dhatu provided by Garbhini (pregnant woman), so Lakshana of Rasa Kshaya is present in Garbhini

(pregnant woman). Due to Rasa Dushti little amount of Rasa formed and is not capable to nourish other Dhatus of body, hence symptoms of other *Dhatu Kshaya* were also found. In the present study majority of patients were consuming *Snigdha* (oily), *Madhur* (sweet), and *Guru* (heavy) *Ahara* (food), so excessive use of *Guru*, *Snigdha*, *Madhura* (channel blocking substances) and *Ahitakara Ahara* etc. as clearly explained by *Sushruta* are those which possess the capacity to produce *Kleda* in the *Dosha*, *Dhatus*, *Malas* and *Srotas*. This *Guru Guna* increases *Kapha* as well as *Kleda*. So it may be concluded that these *dravyas* enhance the *Yonisrava* (white discharge). 48.27% of patients had *Chinta* (stress), which causes *Vata prakopa* and produce the disease. In wet vaginal smear fungal hyphae were found in 58.62 % of patients, gram positive bacteria were found in 31.03% of patients and gram negative bacteria were found in 89.65% of patients. *Acharya Chakrapani* has also said that in body *Sahaja* and *Vaikarika Krimis* are present^[22]. In bacteriology many microorganisms are described as normal flora of the body. These microorganisms remain present in various parts of the body but produce disease only when the resistance of body breaks down.

Discussion on Results

Group A showed highly significant result ($P < 0.001$) in *Yoni srava* (white discharge per vagina). It may be because it's main constituents were *Kashaya Rasa* (astringent), *Ruksha Guna* (dryness) *Pradhana Dravyas* and had Pharmacological Actions like *Stambhana*, *Shoshana* and *Kledashoshaka* properties which restrain the *Yoni srava* (white discharge per vagina)^[23]. The *Yoni Kandu* (itching vulva) was reduced up to 82.60% in Group A which was statistically found highly significant ($P < 0.001$). The most of drugs in *Panchavalkaladi Varti* are *Kanduhara* and *Kaphashamaka*, so reduced the *Yoni Kandu* (itching vulva). Group A showed 100 % relief in *Yoni Daha* (burning sensation in vagina), which was found highly significant ($P < 0.001$). Relief in this symptom in Group A may be due to *Dahaprashamana* and *Pittashamaka* properties *Panchavalkaladi Varti*. 100 % relief was found in the symptom *Yoni Vedana* (pain in vagina) which was found highly significant ($P < 0.001$) in Relief in the symptom in Group A is due to *Vedanasthapana* (analgesic), *Shothahara* (anti-inflammatory) properties of most of the drugs present in *Panchavalkaladi Varti*. In Group A 86.66 % ($P < 0.001$) relief was obtained in *Daurgandhaya*. It may be due to *Kapha Pitta Shamaka* and *Daurgandhaya Nashaka* properties *Panchavalkaladi Varti*. Group A showed 80% result, which was found highly significant. Relief in *Katishoola* (back ache) may be due to *Vedanasthapana* (analgesic) property of most of the drugs present in the *Panchavalkaladi Varti*. *Mootradaha* (burning micturition) reduced up to 91.66% the effect of the therapy was found highly significant. The relief in the symptom may be due to *Dahaprashamana*, *Pittashamaka* and *Sheeta Virya* properties of most of ingredients of *Panchavalkaladi Varti*. On wet vaginal smear examination 66.66 %, 66.66 % & 65 % results were found in Group A, on fungal hyphae, gram positive & gram negative bacteria respectively that is highly significant. In Group A most of the drugs are having anti fungal, antibacterial and antimicrobial properties. And especially *Panchavalkala* and *Jingini* have inhibitory action on *Candida albicans*^[24]. In Group A were improved 69.56% and 80 % result was observed in vulvitis and vaginitis respectively, which were found highly significant. Relief in Group A may be due to anti inflammatory properties of most drugs in *Panchavalkaladi Varti*.

Table 1 Effect on cardinal features- Group A

n	Chief complaints	Mean Score		% of relief	S.D (±)	S.E (±)	' t '	P
		BT	AT					
12	<i>Yoni srava</i> (white discharge per vagina)	2.16	0.5	76.9	0.98	0.28	5.86	<0.001
2	<i>Yoni Pichhilata</i> (Stickiness)	2	0	100	0	0	-	<0.001
11	<i>Yoni Kandu</i> (Itching vulva)	2.09	0.36	82.60	0.90	0.27	6.33	<0.001
2	<i>Yoni Daha</i> (Burning sensation in vagina)	1.5	0	100	0.7	0.7	3	>0.05
8	<i>Yoni Daurgandhya</i>	1.87	0.25	86.66	0.74	0.26	6.17	<0.001

	(Foul smell in vagina)							
2	<i>Yoni Vedana</i> (Pain in vagina)	1.5	0	100	0.7	0.7	3	>0.05

Table 2 Effect on cardinal features- Group B

n	Chief complaints	Mean Score		% of relief	S.D (±)	S.E (±)	' t'	P
		BT	AT					
15	<i>Yoni srava</i> (white discharge per vagina)	2	0.4	80	0.50	0.13	12.22	<0.001
5	<i>Yoni Pichchilata</i> (Stickiness)	1.2	0.2	83.33	0	0	-	<0.001
8	<i>Yoni Kandū</i> (Itching vulva)	1.5	0.25	83.33	0.46	0.16	7.63	<0.001
6	<i>Yoni Daha</i> (Burning sensation in vagina)	1	0	100	0	0	-	<0.001
9	<i>Yoni Daurgandhya</i> (Foul smell in vagina)	1.11	0	100	0.33	0.11	10	<0.001
4	<i>Yoni Vedana</i> (Pain in vagina)	1	0	100	0	0	-	<0.001

Table 3 Effect on Associated features- Group A

n	Associated complaints	Mean Score		% of relief	S.D (±)	S.E (±)	' t'	P
		BT	AT					
4	<i>Katishoola</i> (Back ache)	1.25	0.25	80	0	0	-	<0.001
8	<i>Mutradaha</i> (Burning micturition)	1.37	0.12	91.66	0.51	0.18	7.51	<0.001

Table 4 Effect on Associated features- Group B

n	Associated complaints	Mean Score		% of Relief	S.D (±)	S.E (±)	' t'	P
		BT	AT					
15	<i>Katishoola</i> (Back ache)	2	0.46	76.66	0.63	0.16	9.279	<0.001
12	<i>Mutradaha</i> (Burning micturition)	1.58	0.25	84.21	0.49	0.14	9.380	<0.001

Table 5 Effect on Vaginal pH and Wet vaginal smear - Group A

n	Wet vaginal smear	Mean Score		% of relief	S.D (±)	S.E (±)	' t'	P
		BT	AT					
12	Vaginal pH	11.1	8.75	21.64	2.64	0.76	3.165	>0.05
2	Fungus	1.5	0.5	66.66	0	0	-	<0.001
2	Gram positive	1.5	0.5	66.66	0	0	-	<0.001
12	Gram negative	1.66	0.58	65	1.16	0.33	3.222	<0.001

Table 6 Effect on Vaginal pH and Wet vaginal smear - Group B

n	Wet vaginal smear	Mean Score		% of relief	S.D (±)	S.E (±)	' t'	P
		BT	AT					
15	Vaginal pH	10.3	10.2	1.29	2.26	0.58	0.228	>0.05
11	Fungus	2	0.36	81.81	0.80	0.24	6.708	<0.001
2	Gram positive	2	0.33	83.33	0.57	0.33	5	<0.05
15	Gram negative	1.53	0.46	69.56	0.79	0.20	5.171	<0.001

Table 7 Effect on Local pathology of P/S examination- Group A

n		Mean Score		% of relief	S.D (±)	S.E (±)	' t'	P
		BT	AT					
10	Vulvitis	2.3	0.7	69.56	0.69	0.22	7.236	<0.001
12	Vaginitis	1.66	0.33	80	0.77	.225	5.933	<0.001

Table 7 Effect on Local pathology of P/S examination- Group B

n		Mean Score		% of relief	S.D (±)	S.E (±)	' t'	P
		BT	AT					
11	Vulvitis	1.18	0.18	84.61	0	0	-	<0.001
15	Vaginitis	1.86	0.33	82.14	0.51	0.13	11.50	<0.001

Table 8 Comparative effect of Group A and Group B on chief and associate complaints:

Feature	Df	% of relief		Mean difference	' t'	P
		Group A	Group B			
<i>Yoni srava</i> (white discharge per vagina)	25	76.9	80	-0.0667	-0.228	>0.05
<i>Yoni Kandū</i> (Itching vulva)	17	82.60	83.33	-0.442	-1.17	>0.05
<i>Yoni Daha</i> (Burning sensation in vagina)	6	100	100	0.5	2.121	>0.05
<i>Yoni Daurgandhya</i> (Foul smell)	15	86.66	100	-0.514	-1.877	>0.05
<i>Yoni Vedana</i> (Pain in vagina)	4	100	100	0.500	1.633	>0.05
<i>Katishoola</i> (Back ache)	17	80	76.66	-0.533	1.632	>0.05
<i>Mutradaha</i> (Burning micturition)	18	91.66	84.21	0.0417	0.182	>0.05

Table 9 Comparative effect of Group A and Group B on Local pathology and wet vaginal smear study:

Feature	Df	% of relief		Mean difference	' t'	P
		Group A	Group B			
Vulvitis	19	69.56	84.61	-0.600	-2.854	>0.01

Vaginitis	25	80	82.14	-0.200	-0.801	>0.05
Vaginal pH	26	21.64	1.29	-2.292	-2.510	<0.001
Fungus	11	66.66	81.81	-0.636	-1.073	>0.05
Gram positive	3	66.66	83.33	-0.667	-1.054	>0.05
Gram negative	25	65	69.56	-0.0167	-0.044	>0.05

Table 10 Overall effect of therapy

Total effect	Group A		Group B	
	Number of patients	Percentage	Number of patients	Percentage
Complete Remission	3	25	1	6.66
Marked Improvement	4	33.33	8	60
Moderate Improvement	1	8.33	1	26.66
Mild Improvement	3	25	5	6.66
No Improvement	1	8.33	0	00

Probable mode of action

Panchavalkladi Varti Contains on examination of the pharmacodynamic properties of the drugs Vata (*Ficus bengalensis*), Udumber (*Ficus racemosa*), Ashvatha (*Ficus religiosa*), Plaksha (*Ficus lacor*),Parisha (*Thespesia populnea*), Jambu (*Syzygium cumini*), Sallaki (*Boswellia serrata*),,Dhava (*Anogeissus latifolia*) and Jingini (*Odina woodier*) in equal proportion. Most of the drugs in *Panchavalkladi Varti* have *Kashaya*, *Madhura* and *Katu Rasa*, *Laghu*, *Ruksha* and *Guru Guna*, *Katu Vipaka*, *Sheeta Virya*, *Kapha – Pitta Shamaka* properties.

Rasa: Analysis of *Rasa* present in the individual drugs reveals that the maximum numbers of drugs have *Kashaya Rasa* This *Rasa* is formed by the conjugation of *Prithavi* and *Vayu Mahabhuta* ^[25]. *Prithavi* by virtue of its *Kathina Guna* is opposite to *Drava Guna* and *Sthira* in quality and *Vayu* is *Ruksha* in quality. So, *Kashaya Rasa* by virtue of its *Gunas* restrains *Srava*. The second dominant *Rasa* in *Panchavalkaladi Varti* is *Madhura Rasa*. *Balya*, *Poshana Karma* of *Madhura Rasa* helped in promotion of healing by *Dhatuwardhana* ^[26] (re-growth of the tissue) leading to minimize the inflammation. Some of the ingredients possess *Katu Rasa*. It is formed by *Vayu* and *Agni Mahabhuta*, having qualities opposite to *Kapha*, thus alleviates *Srava*. *Katu Rasa* itself has *Krimighna* and *Kanduhara* properties. Hence, it is useful in reducing the symptoms.

Guna: Most of the ingredients of *Panchavalkaladi Varti* possess *Laghu* and *Ruksha Guna*. By the virtue of these properties this may pacify vitiated *Kapha* and *Kleda*.

Virya: Ingredients used in the preparation of the Trial drug compound were chiefly of *Sheeta Virya*. *Sheeta Virya* drug alleviates the condition of vitiated *Pitta*. *Yoni Daha* (burning sensation in vagina) can be pacified due to *Sheeta Virya*.

Vedana (pain) may be pacified by *Vedana Sthapana* (analgesic) properties of most of ingredients in *Panchavalkaladi Varti*. Majority of the ingredients of the *Panchavalkaladi Varti* are having properties of *Rakta Shodhana* (blood purifier), *Yonishodhana*, *Vrana Ropana* (wound healing) and *Daurgandhaya Nashana*, so it may reduce the symptoms.

Conclusion

From the present study it has concluded that *Upapluta Yonivyapad* can be compared to *Vulvovaginitis* during pregnancy, *Panchavalkladi Varti* has similar effect on *Upapluta Yonivyapad* as that of clingen vaginal suppository standard Control Group, which was observed highly significant. No recurrence was observed during the follow up period in both the Groups, it suggests that the effect of *Panchavalkaladi Varti* is prolonged and long lasting. *Panchavalkaladi Varti* can be used effectively in infections and delaying the recurrence.

References

1. Charak, Charaka Samhita, ed. By Satyanarayan Shastri, : Chaukhambha Bharati Academy Varansi; 2003 C.Chi30/21-22 p.843
2. Vagbhata, Ashtanga Samgraha, eds. Kaviraj Atrideva Gupta, Chaukhambha Krishnadas Academy, Varansi; 2005, A.S.utt.38/49.
3. Kaviraj Atrideva Gupta, Ashtang Hridaya, Chaukhambha Prakashan, Varanasi A.H.Ut.33/48. p.570
4. Tivari, P.V. 2003, Ayurvediya Prasutitantra Evam Striroga, Part 1,2, Chaukhambha Orientalia, Varanasi p.n. 31
5. Charak, Charaka Samhita, ed. By Satyanarayan Shastri, : Chaukhambha Bharati Academy Varansi; 2003 C.Chi30/21-22 p.843
6. Ralph SG, Rutherford AJ, Wilson JD: Influence of bacterial vaginosis on conception and miscarriage in the first trimester: cohort study. BMJ 1999 Jul 24;319(7204):220-3.
7. Hopsu and Harvu: the physiology of human pregnancy, 2nd edition, Oxford, Blackwell 1980.
8. C S. Dawn, pelvic infection textbook of Gynaecology and contraception, Calcutta, 10th edition, 1990 p.353
9. Jeffcoate's Principles of Gynaecology, 2008, eds. Kumar P. and Malhotra N. Jaypee Brother Medical Publishers (P) Ltd, New Delhi P.N.342-343
10. VG Padubidri, Shirish N Daftary, Disease of the Vagina in Howkins and Bourne Shaw's Textbook of Gynaecology, printed Gopsons Papers Ltd., Noida. 13th edition: 2005 p.125-127
11. VG Padubidri, Shirish N Daftary, Disease of the Vagina in Howkins and Bourne Shaw's Textbook of Gynaecology, printed Godsons Papers Ltd., Noida. 13th edition: 2005- p.121
12. Dutta D.C., The text book of Gynaecology, New central book Agency (P) LTD, Kolkata; 2004 p.504
13. F.Gary Cunningham, K.J.L., S.L.B., J.C.H., D.J.R., C.Y.S., Williams obstetricus 23ed. by Gary Cunningham. USA; 2010 p17
14. F.Gary Cunningham, K.J.L., S.L.B., J.C.H., D.J.R., C.Y.S., 2010 Williams obstetricus 23ed. by Gary Cunningham. USA; 2010 p 164.
15. Fernando Arias, 2008 High risk pregnancy and delivery, Reed Elsevier India Private Limited, New Delhi P.198
16. KD Tripathi, Essential medical pharmacology, 5th edition, Jaypee Brothers Medical Publisher LTD, New Delhi, 2004, page no 720.
17. KD Tripathi, Essential medical pharmacology, 5th edition, Jaypee Brothers Medical Publisher LTD, New Delhi, 2003, page no.6
18. Vagbhata, Ashtanga Samgraha, eds. Kaviraj Atrideva Gupta, Chaukhambha Krishnadas Academy, Varansi; 2005 A.S.utt.39/49p.
19. VG Padubidri, Shirish N Daftary, Disease of the Vagina in Howkins and Bourne Shaw's Textbook of Gynaecology, printed Gopsons Papers Ltd., Noida. 13th edition: 2005 p.125-127
20. Charak, Charaka Samhita, ed. By Satyanarayan Shastri, Chaukhambha Bharati Academy Varansi; 2003, Ch.Sh.4/21,22,23.p.875
21. Charak, Charaka Samhita, ed. By Satyanarayan Shastri, Chaukhambha Bharati Academy, Varansi; 2008, Ch.su.25/40 p.469
22. Charak, Charaka Samhita, ed. By Satyanarayan Shastri, reprint, Chaukhambha Bharati Academy, Varansi; 2008, Ch.Vi. 7/9.p.725
23. Charak, Charaka Samhita, ed. By Satyanarayan Shastri, Chaukhambha Bharati Academy, Varansi; 2008, ch.su. 26/42p.507
24. <http://www.britanica.com> On 13/1/2011 at 5pm. Indian journal of pharmaceutical sciences, year 2008 volume 70 page 801 -8003 www.ijpsonline.com/
25. Charak, Charaka Samhita, ed. By Satyanarayan Shastri, Chaukhambha Bharati Academy, Varansi; 2008, ch.su. 26/40 p.503
26. Charak, Charaka Samhita, ed. By Satyanarayan Shastri, Varanasi: Chaukhambha Bharati Academy; 2003, ch.su. 26/42p.504