

ROLE OF NIMBADI YONIVARTI IN THE MANAGEMENT OF SWETAPRADARA w.s.r. ABNORMAL VAGINAL DISCHARGE

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ABSTRACT :

Shwetapradara (Abnormal Vaginal discharge) in the reproductive age group is the most common complaint encountered everyday both by gynecologists and general practitioners. It occurs in 1-14% of all women in the reproductive age group and is responsible for 5-10 million OPD visits per year throughout the world. The prevalence of vaginal discharge in India is estimated to be 30%. The current study is an attempt to evaluate the efficacy of *Nimbadi Yonivarti* in *Swetapradara*. Married woman age group from 20yrs to 60yrs having clinical features of *Shwetapradara* and having positive causative organism by wet smear test have been selected for the trial. Total 51 patients were registered from the OPD of *Stree Roga* and *Prasooti Tantra* Department, IPGT & RA, Jamnagar. Among registered patients, 50 patients completed the course of treatment. *Nimbadi Yonivarti* (3 gm each) was given per vaginally once at bed time for 15 days continuously. Overall effect on subjective and objective parameters was found 85.13% of patients without any complication with complete remission (24%), markedly improvement (60%) and moderately improvement (10%). The data revealed that *Nimbadi Yonivarti* is very much effective therapy in the management of abnormal vaginal discharge and it can be safely prescribed in syndromic management of *Swetapradara*.

Key words: Abnormal Vaginal discharge, *Nimbadi Yonivarti*, *Swetapradara*.

INTRODUCTION: Ayurveda is rich in pharmaceutical preparations. But only few preparations are being used in today's Ayurvedic practice because of inconvenient forms. In management of *Shweta pradara* many *Kalpana* like *Yoni Prakshalana*, *Yoni Avachurnana*, *Yoni Pichu*, *Yoni Varti* etc. are mentioned. Out of them *Yoni Varti* is the only preparation which does not need any precaution and supervision. It is also very convenient, as patient can administer it herself without any aid. *Shwetapradara* (Abnormal Vaginal discharge) in the reproductive age group is the most common complaint encountered everyday both by

gynaecologists and general practitioners. It occurs in 1-14% of all women in the reproductive age group^[1] and is responsible for 5-10 million OPD visits per year throughout the world. The prevalence of vaginal discharge in India is estimated to be 30%. Abnormal vaginal discharge also predisposes to significant morbidity in the form of pelvic inflammatory diseases, infertility, endometriosis, cuff cellulitis, urethral syndrome, pregnancy loss, preterm labour etc. Most common cause of symptomatic vaginal discharge is bacterial vaginosis (33-47%)^[2], followed by candidiasis (20-40%) and trichomoniasis (8-10%)^[3]. These

three conditions account for 90% of all aetiologies of abnormal vaginal discharge. Multiple infections can also coexist.

Due to today's food habits, changing life style and especially due to continuously nagged and accepted as an essential feature of womanhood vaginal discharge has emerged out as one of the commonest reproductive health problem of women. Regarding the gravity of the disease, it neither causes mortality nor morbidity but it is accountable to the problem of sexual anxiety and even sometimes fears of carcinoma or failure to conceive. Apart from this, it also causes mental stress, local inconvenience to the patient which deteriorates the day to day work and the quality of life. Thus it does not cut the years of life but the life of the years. Hence, it was planned with the aim and objective that to evaluate the efficacy of *Nimbadi Yonivarti* in *Swetapradara* and a significant data based treatment regimen can be established through Ayurveda.

MATERIALS AND METHODS :The Patients attending from Out-Patient Department of *Stree Roga* and *Prasooti Tantra*, IPGT&RA, Jamnagar fulfilling the criteria for selection were included into the study irrespective of caste, religion etc. A special research proforma was prepared.

Ethical clearance: Study started only after obtaining Ethical clearance from the Institutional Ethics Committee. Ethical clearance No.: PGT/7/-A/Ethics/2013-2014/2753 dated on 13/11/2013

CTRI Registration No.:
CTRI/2015/07/006024

Criteria for selection of cases : Written informed consent of the patients was taken before including in the study.

Inclusion criteria:

- Married women
- Age between 20 years to 60 years.

- The patients having clinical signs & symptoms of *Swetapradara*.
- The patients having positive causative organism by wet smear test.

Exclusion Criteria:

- Unmarried women
- Age below 20 years and above 60 years
- Pregnant women
- Patients suffering from Tuberculosis, Sexually Transmitted Disease like VDRL, HIV, gonorrhea, Genital malignancy and Congenital and any other pathologies of reproductive tract.

Criteria for Diagnosis:

- Abnormal vaginal discharge present during examination.
- Pathogens present in wet slide study and vaginal swab culture.

Laboratory Investigations:

- Routine Hematological Examination - Hb, T.L.C., D.L.C., E.S.R.
- Routine and Microscopic Examination of Urine
- Serological test-VDRL, HIV
- RBS
- U.S.G. if required
- Wet slide study of vaginal smear
- Vaginal swab culture and sensitivity
- Gram stains for Bacteriology
- Vaginal pH
- Microbial study

Selection of drug : *Nimbadi Yoga* is an *Anubhuta Yoga*^[4] which was used for *Shwetapradara* due to its *Stambhana*, *Krimighna*, *Kandudhna*, *Vranashodhana*, *Vranaropana*, *Putihara* etc. Properties due to raw drugs (*Triphala*, *Shudhdha Sphatika* and *Madhu*) used in it. Previously two works which were carried out on the same topic in the department gave very encouraging results, but in both the studies sample size was small.^{[5],[6]} Hence, it was planned to continue the same study with

the aim to further evaluate the efficacy of *Nimbadī Yonivarti* in *Swetapradara* in a large sample so that a significant data based treatment regimen for *Swetapradara* can be established through *Ayurveda*.

The drug was prepared in the Pharmacy of Gujarat Ayurved University, Jamnagar after identification of raw drugs in Pharmacognosy department and then analyzed pharmaceutically.

Treatment protocol: *Nimbadī Yonivarti* (3 gm each) was given per vaginally once at bed time for 15 days continuously with the consent of the patient.

Criteria of Assessment: Assessment criteria were adopted in detail on basis of both subjective & objective parameters.

Subjective parameters:

- *Yoniataha Srava* (White discharge per vagina)
- Smell
- Consistency
- *Yoni kandu* (Itching vulva)
- *Katishula* (Backache)
- *Udarashula* (Pelvic pain)

OBSERVATIONS AND RESULTS:

Table 1: Effect of *Nimbadī Yonivarti* on General symptoms of 50 patients of *Shwetapradara*.

Sr.no	Investigation	Mean Score		% of relief	S.D. (±)	N	S.E. (±)	't'	P
		B.T.	A.T.						
1.	<i>Yonitah Srava</i>	2.4	0.36	85	0.669	51	0.0946	21.567	<0.001
2.	<i>Yoni Daurgandhaya</i>	1.564	0.0769	95.08	0.601	40	0.0963	15.443	<0.001
3.	Consistency	2.2	0.18	91.82	0.769	51	0.109	18.573	<0.001
4.	<i>Yoni Kandu</i>	2.417	0.479	80.17	0.633	49	0.0913	21.217	<0.001
5.	<i>Yoni Vedana</i>	1.83	0.191	89.53	0.605	48	0.0883	18.557	<0.001

Table 2: Effect of *Nimbadī Yonivarti* on Associated symptoms of 50 patients of *Shwetapradara*.

Sr.no	Investigation	Mean Score		% of relief	S.D. (±)	N	S.E. (±)	't'	P
		B.T.	A.T.						
1.	<i>Katishoola</i>	2.245	0.449	80.00	0.645	50	0.092	19.495	<0.001
2.	<i>Udarashoola</i>	1.622	0.156	90.41	0.588	46	0.088	16.739	<0.001
3.	<i>Mutradaha</i>	2.408	0.204	91.53	0.707	50	0.101	21.838	<0.001

- *Mutradaha* (Burning Micturition)
- During examination local tenderness

Objective parameters:

- Based on 10% KOH Preparation
- Based on Aerobic Culture
- Based on Fungal Culture
- Based on wet preparation (pus cell)
- Based on wet preparation (Trichomonas Vaginalis examination)
- Based on Vaginal pH

Overall assessment of the therapy:

< 25 % : Unchanged
 26 -50 % : Mild Positive Response
 51- 75% : Moderate Positive Response
 76-99% : Marked Positive Response
 100% : Complete Remission

Statistical test: Timely noted observation had been subjected to statistical analysis for the level of significance with paired student 't' test as well as with percentage.

Follow up: Patients had been followed after completion of the treatment for 1 month.



Table 3: Effect of Nimbadī Yonivarti on Wet vaginal smear investigations of 50 patients of Shwetapradara.

Wet vaginal smear	% of relief	Mean score		S.D. (±)	N	S.E. (±)	Paired "t" test	"p"
		BT	AT					
In Normal saline								
Pus cell	65.96	1.343	0.457	1.078	50	0.182	4.859	<0.001
In KOH								
D – Yeast	33.33	0.857	0.571	0.488	7	0.184	0.172	>0.05
AEROBIC CULTURE								
Pseudo monas aeruginosa	75.00	1.000	0.250	0.463	8	0.164	0.003	<0.05
Eschericia coli	57.14	0.636	0.636	0.894	11	0.270	1.000	>0.05
Enterobactor species	75.00	1.000	0.250	0.500	4	0.250	0.058	>0.05
FUNGAL CULTURE								
Candida albicans	42.86	0.778	0.556	0.667	9	0.222	0.347	>0.05
Candida glabrata	100.00	-			-	-	-	-
Vaginal PH	21.57	6.860	5.380	1.015	50	0.144	10.311	<0.001

Table 4: Effect of Nimbadī Yonivarti on routine Hematological investigations of 50 patients of Shwetapradara.

Sr.no	Investi-gation	Mean Score		% of relief	S.D. (±)	n	S.E. (±)	't'	P
		B.T.	A.T.						
1.	Hb%	11.438	11.246	1.70	0.332	50	0.047	4.083	<0.001
2.	TLC	7080	7328	3.50	1162.727	50	164.434	1.508	>0.05
3.	N	59.56	60.68	1.88	5.476	50	0.774	1.446	>0.05
4.	L	34.52	33.3	3.53	5.211	50	0.737	1.655	>0.05
5.	E	3.48	3.46	0.57	1.116	50	0.158	0.127	>0.05
6.	M	2.44	2.54	4.10	0.647	50	0.0915	1.093	>0.05
7.	ESR	22.44	21.44	4.46	15.729	50	2.224	0.45	>0.05

Table 5: Effect of Nimbadī Yonivarti on routine Urine investigations of 50 patients of Shwetapradara.

Sr.no	Investigation	Mean Score		% of relief	N	S.D. (±)	S.E. (±)	't'	P
		B.T.	A.T.						
1.	Urine pus cell	6.86	4.06	40.82	51	17.784	2.515	1.113	>0.05
2.	Epi. Cell	3.36	2.13	36.61	51	8.239	1.165	1.056	>0.05
3.	Urine RBC	9.25	1.5	83.78	10	17.178	5.432	1.427	>0.05

DISCUSSION : Out of 51 registered patients, 50 patients had completed the course of treatment. Overall effect was found 85.13% with 87.30% in subjective parameters and 63.75% in objective parameters. 12 patients (24%) got complete remission, 30 patients (60%) were found markedly improvement, 5 patients (10%) were found moderately improved, 3 patients (6%) were found mild improvement & no any patients remain unchanged.

Regarding general symptoms as well as associated symptoms, highly significant improvement ($p<0.001$) was observed by paired 't' test and percentage relief was found more than 80% (Table 1 & 2). Effect on all general *Yonigata Symptoms* may be due to *Kashaya* & *Tikta Rasa*, *Kandughna*, *Krimighna* and *Kapha-Kleda Hara* properties of *Nimbadi Yonivarti* by local route of administration. Relief in all associated symptoms is due to *Tridoshahara* and *Rasayana* properties of drug. Highly significant improvement in relieving *pus cells* in Normal saline and in maintaining Vaginal pH while significant improvement was noted in *Pseudomas areculosa* aerobic bacteria. Good percentage relief was found in aerobic bacteria as well as fungal culture report. *Kashaya*, *Tikta*&*Amla Rasa* of the drug is very helpful in maintaining the vaginal pH(Table 3). By the property of *Rasayana Guna* *Nimbadi Yonivarti* significantly raises the Hb%. No remarkable change was found in Hematological investigations & Urine routine as well as microscopic examination and all the values remained within normal limits after the treatment. It may be because the effect of drugs did not have any major effect systemically (Table 4 & 5). In follow up study no patient had complaint of recurrence of symptoms within one month and no any adverse drug

reaction was found during treatment & in follow up period.

Probable Mode of action of Drug: Cure of disease takes place due to *Samprapti Vighatana*. This can be explained by the action of *Rasa*, *Guna*, *Virya*, *Vipaka* and *Prabhava* of drugs in the various *Srotasa* and on *Dosha* and *Dushya* in human body. *Nimbadi Yoga* has *Kashaya*, *Tikta*, *Amla*, *Madhura* and *Katu Rasa*; *Laghu*, *Ruksha*, *Sheeta*, *Guru* and *Snigdha Guna*; *Sheeta* and *Ushna Virya*; *Madhura* and *Katu Vipaka* and *Tridoshahara* specially *Kapha-Pittahara* properties by which it breaks the *Samprapti*.

Nimbadi Yoga possesses mainly *Kashaya Rasa*. *Kashaya Rasa* is mainly formed by conjugation of *Vayu* and *Prithvi Mahabhuta*.^[7] *Vayu* is *Ruksha* in quality^[8] and dries up the excessive fluids present in the tissues while *Prithvi* by virtue of *Kathina* and *Sthira Guna* which are opposite to *Drava* and *Sara Guna* reduces the *Srava*. So, *Kashaya Rasa* by virtue of its *Guna* restrains *Srava*.^[9] The second dominant *Rasa* in *Nimbadi Yoga* is *Tikta*, *Amla* & *Madhura Rasa*. *Tikta rasa* is a combination of *Vayu* and *Akasha Mahabhuta*.^[10] These two *Mahabhutas* are having qualities opposite to *Kapha*.^[11] *Tikta Rasa* is having *Kandughna*, *Kleda*, *Puya* and *Kapha shoshna* pharmacological properties.^[12] While *Amla Rasa* is possess *Laghu* and *Ushna Guna* which quash the *Kapha*.^[13] Some of the ingredients of *Nimbadi Yoga* possess *Madhura Rasa* which is *Vata* and *Pitta Shamaka* and also has *Prinana*, *Jeevana* property etc.^[14] *Balya*, *Poshana Karma* of *Madhura Rasa* helped in promotion of healing by *Dhatuvardhana*^[15] (re-growth of the tissue) leading to minimal inflammation.

Hence, *Tikta*, *Amla* and *Madhura Rasa* alleviate *Srava*.

The third dominant *Rasa* is *Katu Rasa* in *Nimbadi Yoga*. This *Rasa* is formed by *Vayu* and *Agni Mahabhuta*,^[16] having qualities opposite to *Kapha* (*Prithvi & Jala*), thus, reduces *Srava*. *Katu Rasa* also has *Shothaghna*, *Kandughna* and *Abhishyanda-Kleda-Sneha* *Upahanti* properties.^[17] By these properties it eases *Srava* as well as reduces *Shotha*. *Kashaya*, *Tikta* and *Katu Rasa* have *Krimighna*^[18] property which directly inhibits the growth of *Krimi* and finally diminishes *Srava*.

Most of the ingredients of *Nimbadi Yoga* possess *Laghu* and *Ruksha Guna*. By the virtue of this property this may pacify vitiated *Kapha* and *Kleda* and supports the function of the other *Rasas*. *Ruksha Guna* also restrains *Srava* by virtue of its *Stambhana* action. *Snigdha* and *Guru Guna* is predominant in some ingredients. So, these ingredients alleviate vitiated *Vayu* while *Sheeta Guna* alleviates vitiated *Pitta*. Thus, ultimately help to stop secretion. *Madhu* has *Yogavahi Guna* so, it may act quickly even in smaller dose.

The equal ingredients of *Nimbadi Yoga* are having *Sheeta* & *Ushna Virya*. *Sheeta Virya* drugs normalize the condition of vitiated *Pitta*. And the *Ushna Virya* drugs pacify vitiated *Vata* and *Kapha*. By virtue of these qualities *Nimbadi Yoga* may alleviate the vitiated *Vata*, *Pitta* and *Kapha* which eradicates *Shweta pradara*. *Sheeta Virya* drugs also act in *Srotasa* and cause *Stambhana*. In this way trial drug restrains *Srava* by *Stambhana* action.

So, Probable mode of action of *Nimbadi Yoga* can be understood as:

- *Yoni Shodhana*- Clean the vagina- by *Vrana Shodhana* Property

- Restrain *Srava* - *Kashaya*, *Tikta* and *Katu Rasa* property *Laghu* and *Ruksha Guna*.

- Kill causative microorganism - *Krimighna*, antimicrobial, antibacterial, anti fungal, antiviral properties

- Rejuvenate the epithelium – *Rasayana Prabhava*, antioxidant and *Madhura Rasa* property like *Prinana*, *Jivana* etc.

- Improving the body defense system - Immunomodulator property

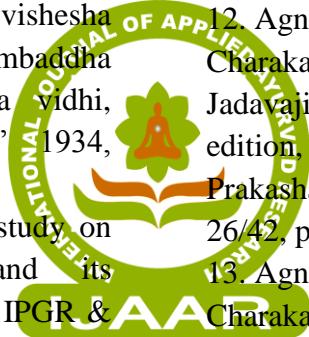
The modern technology has proved that *Nimbadi Yoga* drugs e.g. *Nimba* has anti-inflammatory, antimicrobial^{[19],[20],[21],[22]} anti-bacterial^[23] and immuno-modulatory^[24] pharmacological properties by which it kill the causative microorganism, reduces inflammation and also supports the vaginal defense mechanism. *Triphala* destroys micro-organisms, repairs damaged tissue and also increases immunity by its rejuvenative nature and exhibits antiviral, antibacterial, anti fungal, immuno-modulatory and antioxidant properties.^[25] Honey has also anti bacterial property^[26]. It kills bacteria by plasmolysis & no organism can successfully multiply to significant amounts in honey. A functional relationship between hydrogen peroxide produced in honey and antibacterial activity strongly pointed to H_2O_2 as the main contributor to antibacterial activity.^[27] Thus, it inhibits the micro-organism growth and break the *Samprapti*. *Sphatika* has styptic and astringent Properties by which it restrains *Srava*. It also acts as adjuvant.^[28]

CONCLUSION: The study is overall concluded that the *Nimbadi Yonivarti* is highly effective in reducing subjective & objective variables of *Shwetapradar* (abnormal vaginal discharge)& will also

help in deriving new conclusion and proverbs in the syndromic (Trichomonas, Candiasis, Bacterial vaginosis, Chlamydia, Gonococcus etc.) management of vaginal discharge.

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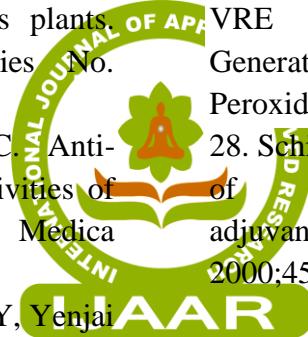
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