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REVIEW OF BHAVAPRAKASHOKTA VATADI VARGA AND THEIR ROLE IN REPRODUCTIVE SYSTEM

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ABSTRACT:

Introduction: *Bhavaprakasha Nighantu* is one of the significant *nighantu* to study the medicinal plants mentioned in *Ayurveda*. In this *Nighantu Vatadi Varga* is mentioned in the 5th order, which contains 43 drugs. Most of the drugs in this *Varga* are having *Yonidoshahara, Vrushya, Shukrala* etc actions and thus have a role in reproductive health. **Materials and methods:** *Vatadi Varga* of *Bhavaprakasha Nighantu* is systematically reviewed along with their role in reproductive health. **Results and discussion:** The drugs mentioned in this *Varga* are *Tikta, Kashaya Rasa, Shita Virya* and *laghu, Ruksha* in nature. These drugs are *Krimihara, Yonishodhana, Garbhakara* and *Shukrala* in action. **Conclusion:** The drugs of *Vatadi Varga* can be used as a single drug or in combinations for both internal and external purpose to treat various pathological conditions of reproductive health. Here an attempt is been made to systematically review the drugs of *Vatadi Varga* and their role in reproductive health.

Keywords: *Bhavaprakasha Nighantu, Vatadi Varga, Reproductive health*

INTRODUCTION:

Bhavaprakasha Nighantu written by *Acharya Bhavamishra* in the 16th Cent is one of the significant *Nighantu* for the study of identification, properties and actions of medicinal plants mentioned in *Ayurveda*. It is also called as *Haritakyadi Nighantu*. It contains 23 *Vargas*, starts with *Haritakyadi Varga* and ends up with *Anekartha Varga*. *Vatadi Varga* is mentioned in the 5th order, it has total of 43 drugs. The *Varga* starts with *Vata* Drug. Among *Mishrakagana Panchakshiri Vruksha* are explained here.

The overall prevalence of menstrual disorders was reported by 76.9%. The most common menstrual disorder was PMS (71.3%). Dysmenorrhoea was 46.3%, amenorrhoea (21.3%), oligomenorrhea (12.8%), polymenorrhagia (22.2%), menorrhagia (15.9%) and hypomenorrhea (15%) [1].

In modern industrialized countries, the annual incidence of PID in women 15 to 39 years of age seems to be 10 to 13 per 1,000 women, with a peak incidence of about 20 per 1,000 women in the age group 20 to 24 years [2].

According to WHO Around 17.5% of the adult population – roughly 1 in 6 worldwide – experience infertility, showing the urgent need to increase access to affordable, high-quality fertility care for those in need [3].

Ayurveda is the science of life and longevity. It focusses on maintaining overall health by keeping body, mind and spirit in equilibrium. Reproductive health is one of the parts of overall health of human life. Many drugs in *Vatadi Varga* are having the *Yonidoshahara, Vrushya, Garbhakara* etc actions. This article highlights the important role of the *Vatadi Varga* in reproductive health.

AIMS AND OBJECTIVES:

To review the drugs of *Vatadi Varga* of *Bhavaprakasha Nighantu* for their action in reproductive health.

METHODOLOGY:

Source of data- *Vatadi Varga* of *Bhavaprakasha Nighantu* and modern literatures including textbooks, website, reputed journals were referred to gather the information about the drugs and their pharmacological activities.

Method of collection of data- The drugs of *Vatadi Varga* were screened to see if they have *Vrushya, Yonidoshahara, Garbhakara* action individually or in combination.

Botanical name and Family of all the *Dravyas* were noted and tabulated.

OBSERVATIONS AND RESULTS:

Table No.1: Botanical name, Family and *Rasapanchaka* of *Vatadi Varga Dravyas* [4].

Sl. No.	Dravya	Botanical name Family	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Doshakarma*
1	*Vata*	*Ficus bengalensis* Linn Moraceae	*Kashaya*	*Guru, Grahi*	*Shita*	*Katu*	*Kaphapittahara*
2	*Ashwatha*	*Ficus religiosa* Linn Moaraceae	*Kashaya*	*Guru, Ruksha*	*Ushna*	*Katu*	*Kaphapittahara*
3	*Parisha*	*Thespesia populnea* Soland ex Correa Malvaceae	*Phala-Amla Moola-Madhura Majja-Kashaya, Madhura*	*Snigdha*	*Shita*	*Madhura*	*Kaphakara*
4	*Nandivruksha (Ashwatha bheda)*	*Ficus retusa* Linn Moraceae	*Madhura, Tikta, Kashaya*	*Laghu, Grahi*	*Ushna*	*Katu*	*Kaphapittahara*
5	*Udumbara*	*Ficus glomerata* Roxb. Moraceae	*Madhura, Kashyaya*	*Guru, Ruksha*	*Shita*	*Katu*	*Kaphapittahara*
6	*Kakodumbarika*	*Ficus hispida* Linn Moraceae	*Tikta, Kashaya*	*Shita*	*Shita*	*Katu*	*Kaphapittahara*
7	*Plaksha*	*Ficus infectoria* Roxb. Moraceae	*Kashaya*	*Shita*	*Shita*	*Katu*	*Pittakaphahara*
8	*Shirisha*	*Albizzia lebbeck* Benth. Fabaceae	*Madhura, Tikta, Kashaya*	*Laghu*	*Ushna*	*Katu*	*Tridoshahara*
9	*Shaala*	*Shorea robusta* Gaertn. Dipterocarpaceae	*Kashaya*	*Ushna*	*Ushna*	*Katu*	*Kaphahara*
10	*Sarjaka*	*Vateria indica* Linn. Dipterocarpaceae	*Katu, Tikta, Kashaya*	*Ushna*	*Ushna*	*Katu*	*Kaphahara*
11	*Shallaki*	*Boswellia serrata* Roxb.	*Kashaya*	*Shita*	*Shita*	*Katu*	*Pittakaphahara*

		Burseraceae					
12	*Shimshapa*	*Dalbergia sissoo* Roxb. Fabaceae	*Katu, Kashaya, Tikta*	*Ushna*	*Ushna*	*Katu*	*Kaphahara*
13	*Kakubha*	*Terminalia arjuna* W. & A Combretaceae	*Kashaya*	*Grahi*	*Shita*	*Katu*	*Pittakaphahara*
14	*Bijaka*	*Pterocarpus marsupium* Roxb. Fabaceae	*Kashaya*	*Shita*	*Shita*	*Katu*	*Pittakaphahara*
15	*Khadira*	*Acacia catechu* Willd. Mimosaceae	*Tikta, Kashaya*	*Shita*	*Shita*	*Katu*	*Pittakaphahara*
16	*Shweta Khadira*	*Acacia suma* Buch. Ham Mimosaceae	*Tikta, Kashaya*	*Shita*	*Shita*	*Katu*	*Kaphahara*
17	*Irimeda*	*Acacia fernasiana* Willd. Mimosaceae	*Kashaya*	*Ushna*	*Ushna*	*Katu*	*Kaphahara*
18	*Rohitaka*	*Tecomella undulata* Seem. Bignoniaceae	*Tikta, Kashaya*	*Shita*	*Shita*	*Katu*	*Kaphapittahara*
19	*Babbula*	*Acacia arabica* Willd. Mimosaceae	*Tikta, Kashaya*	*Ushna*	*Ushna*	*Katu*	*Kaphahara*
20	*Aristaka*	*Sapindus mukorossi* Gaertn. Sapindaceae	*Tikta*	*Snigdha*	*Ushna*	*Katu*	*Kaphahara*
21	*Putranjiva*	*Putranjiva roxburghii* Wall. Euphorbiaceae	*Madhura, Lavana, Katu*	*Guru*	*Shita*	*Katu*	*Shleshmavatahrut*
22	*Ingudi*	*Balanites roxburghii* Planch. Simaroubaceae	*Tikta*	*Ushna*	*Ushna*	*Katu*	*Kaphaghna*
23	*Jingini*	*Lannea*	*Madhura,*	*Grahi*	*Ushna*	*Katu*	*Kaphavatahara*

		coromandelica Roxb. Anacardaceae	*Katu, Kashaya, Lavana*				
24	*Tamala*	Garcinia morella Desr. Guttiferae	*Tikta, Kashaya*	*Ushna*	*Ushna*	*Katu*	*Kaphapittahara*
25	*Tooni*	*Cedrela toona* Roxb. Meliaceae	*Kashaya, Madhura, Tikta*	*Laghu, Grahi*	*Shita*	*Katu*	*Kaphapittahara*
26	*Bhurja*	*Betula utilis* D. Don. Betulaceae	*Kashaya*	*Ushna*	*Ushna*	*Katu*	*Kaphapittahara*
27	*Palasha*	*Butea frondose* Koen. Ex Roxb. Fabaceae	*Kashaya, Katu Tikta*	*Laghu, Snigdha, Sara*	*Ushna*	*Katu*	*Kaphavatahara*
28	*Shalmali*	*Bombax malabaricum* DC. Bombacaceae	*Madhura*	*Shita*	*Shita*	*Madhura*	*Vatapittahara*
29	*Mocharasa*	Gum of silk Cotton Tree	*Kashaya*	*Grahi, Snigdha*	*Shita*	*Katu*	*Kaphapittahara*
30	*Kootashalmali*	*Ceiba pentandra* Linn. Bombacaceae	*Tikta, Katu*	*Ushna*	*Ushna*	*Katu*	*Kaphavatahara*
31	*Dhava*	*Anogeissus latifolia* Wall. Combretaceae	*Kashaya, Madhura*	*Shita*	*Shita*	*Katu*	*Pittakaphahara*
32	*Dhanvanga*	*Grewia tilaefolia* Vahl. Tiliaceae	*Kashaya*	*Laghu, Ruksha*	*Ushna*	*Katu*	*Kaphapittahara*
33	*Karira*	*Capparis aphylla* Roth. Capparidaceae	*Katu, Tikta*	*Ushna*	*Ushna*	*Katu*	*Kaphavatahara*
34	*Shakota*	*Streblus asper* Lour. Moraceae	*Kashaya*	*Ushna*	*Ushna*	*Katu*	*Vatashleshmahara*
35	*Varuna*	*Crataeva nurvala* Buch. Ham. Capparidaceae	*Kashaya, Madhura, Tikta, Katu*	*Ruksha, Laghu*	*Ushna*	*Katu*	*Pittajanaka, Kaphahara*
36	*Katabhi*	*Careya arborea* Roxb. Lecythidaceae	*Katu*	*Laghu, Ruksha*	*Ushna*	*Katu*	*Kaphahara*

37	*Mokshaka*	*Schrebera swietenioides* Roxb. Oleaceae	*Katu, Tikta*	*Grahi*	*Ushna*	*Katu*	*Kaphavatahrut*
38	*Jalashirshaka*	*Trichodesma zeylanicum* R. Br. Boraginaceae	*Madhura, Tikta, Kashaya*	*Laghu*	*Ushna*	*Katu*	*Tridoshahara*
39	*Shami*	*Prosopis spicigera* Linn. Mimosaceae	*Tikta, Katu, Kashaya*	*Laghu*	*Shita*	*Katu*	*Kaphahara*
40	*Saptaparna*	*Alstonia scholaris* R.Br. Apocynaceae	*Kashaya*	*Snigdha, Sara*	*Ushna*	*Katu*	*Shleshmavatahara*
41	*Tinisha*	*Ougeinia dalbergioides* Benth. Fabaceae	*Kashaya*	*Shita*	*Shita*	*Katu*	*Kaphapittahara*
42	*Jarul*	*Lagerstroemia flosreginae* Retz. Lytheraceae	*Kashaya*	*Shita*	*Shita*	*Katu*	
43	*Bhumisaha*	*Tectona grandis* Linn. Verbenaceae	*Kashaya*	*Shita*	*Shita*	*Katu*	*Pittakaphahara*

Table No.2: Phytochemicals, substitute, controversies of *Vatadi Varga Dravyas* [4].

Dravya	**Phytochemicals**	**Substitutes, controversies**
Vata	Tannins	-
Ashwatha	Tannins	-
Parisha	Tannins, quercetin, gossypol, β-sitosterol	F. arnottiana, F. rumphii
Nandivruksha (Ashwatha bheda)	Tannins	F. microcarpa, F. altissima Substituets
Udumbara	Tannins, flavonoids, essential oil, anthocyanins	-
Kakodumbarika	Tannin, saponin, glycosides	-
Plaksha	Tannins, flavonoids, proteins, glycosides,	-
Shirisha	Tannins, saponins, terpenes, oleic acid, palmitic acid, geraldone, luteolin	odoratissima, A. procera
Shaala	Ursolic acid, α-amyrin, Friedelin, lignans,	Ashwakarna- Dipterocarpus alatus

	phenols, sterols	Ajakarna- D. terbinatus
Sarjaka	Tannins, bergenin, benzophenone, stilbinoides	-
Shallaki	Essential oil, gum, resins, boswellic acid	floribunda
Shimshapa	Dalbergin, tannins,	latifolia,
Kakubha	Tannin, Calcium, magnesium, arginine, arjunic acid	Terminalia myriocarpa (PV Sharma), Lactuca serriola
Bijaka	Kino tannic acid, lupeol	-
Khadira	Catechin, catechu tannic acid, D-galactose	-
Shweta Khadira	Tannin, Catechin	Accacia ferruginea a variety
Irimeda	Tannin	leucophloea
Rohitaka	Tecol, tecoside, tectoquinone	Amoora rohituka
Aristaka	Trifolioside 2, sapindoside, saponins	S. trifoliatus. S. emarginatus
Babbula	Catechin, Ca, Mg, Tannin, Arabic acid	-
Putranjiva	Glycoside, triterpene, saponins	-
Ingudi	Saponins, diosgenin, balanitins	-
Jingini	quercetin, gum, terpenoids, leucocyanidin	-
Tamala	Morellin, garcinol, epicatechin, kaempferol,	-
Tooni	Nyctanthin, tannic acid, citric acid, calcium	-
Bhurja	Volatile oil, botulin, sitosterol, lupeol, oleanolic acid	Betula alnoides a variety
Palasha	Glucosides, albumin, glycine, leucocyanidin	-
Shalmali	Tannic acid, gallic acid, lupeol, gossypol	-
Mocharasa	Catechu tannic acid,	-
Kootashalmali	Alkaloids, tannin, saponin,	-
Dhava	Tannin, gallic acid, ellagic acid, quercetin	-
Dhanvanga	Tannins, resins, glycosides, terpenoids	-
Karira	Cappariciп, Phenolics, sterols, fatty acids	-
Shakota	Volatile oil, caryophyllene, tri-terpenoids	-
Varuna	Quercetin, rutin, lupeol, β-sitosterol	-
Katabhi	Gum, D-galactose, glucuronic acid	-
Mokshaka	Tannic acid, sterols, saponins, polyphenols	-
Jalashirshaka	Epicatechin, quercetin, rutin, gallic acid	Dalbergia volubilis (PV Sharma)
Shami	Sterols, flavonoids, gum, ferulic acid	-
Saptaparna	Echitamine, lupeol, saponins, sterols, Alstonine	-

Tinisha	Lupeol, betulic acid, iso flavonoids, homoferreirin	-
Jarul	Tannins, ellagic acid, triterpenes, glycosides	-
Bhumisaha	Tectoquinin, volatile oil, steroids, fatty esters	-

Table No.3: Showing the research activities on *Vatadi Varga Dravyas*

Sl. No	DRUG	PART USED	RESERCH ACTIVITY
1	*Ficus religiosa*	Leaves	Upregulation of Cyp19a1 and PPAR-γ in ovarian steroidogenic pathway, A cure for polycystic ovary syndrome [5]
2	*Ficus Religiosa*	Fruits	Anti-fertility activity [6]
3	*Thespesia populnea*	Seeds	Antiimplantation activity [7]
4	*Albizia lebbeck* (L.) Benth	Bark	antifertility activity [8]
5	*Dalbergia sissoo* Roxb.	Stem Bark	Anti-spermatogenic Activity [9]
6	*T. arjuna*	Bark	Human sperm DNA damage inhibition and antioxidant activity [10]
7	*Pterocarpus marsupium* Methanolic	Stem bark	Testosterone Propionate Induced Polycystic Ovary Syndrome in Female Albino Rats [11]
8	*Sapindus mukorossi*	*Fruits*	vaginal contraceptive cream [12]
9	*Tecomella undulata*	Root	Antispermatogenic activity [13]
10	*Dalbergia sissoo* Roxb.	Leaf	spermatogenesis and fertility activity [14]

Table No. 4: *Karmas of Vatadi Varga* related to reproductive system [15].

S. no.	*Dravya*	*Yoni doshahara*	*Yoni shodhana*	*Krimi-hara*	*Garbha-patana*	*Shukra hara*	*Shukras-tambhana*	*Vrushya*
1	*Vata*	+	-	-	-	-	-	-
2	*Ashwatha*	-	+	-	-	-	-	-
3	*Parisha*	-	-	+	-	-	-	-
4	*Nandivruksha*	-	-	-	-	-	-	-
5	*Udumbara*	-	-	-	-	-	-	-
6	*Kakodumbara*	-	-	-	-	-	-	-
7	*Plaksha*	+	-	-	-	-	-	-
8	*Shirisha*		-	-	-	-	+	-
9	*Shala*	+	-	+	-	-	-	-
10	*Sarjaka*	-	-	-	-	-	-	-

11	*Shallaki*	-	-	-	-	-	-	-
12	*Shimshapa*	-	-	-	+	-	-	-
13	*Kakubha*	-	-	-	-	-	-	-
14	*Bijaka*	-	-	+	-	-	-	-
15	*Khadira*	-	-	+	-	-	-	-
16	*Shwetakhadira*	-	-		-	-	-	-
17	*Irimeda*	-	-	+	-	-	-	-
18	*Rohitaka*	-	-		-	-	-	-
19	*Babbula*	-	-	+	-	-	-	-
20	*Aristaka*	-	-	-	+	-	-	-
21	*Putranjiva*	-	-	-	-	-	-	+
22	*Ingudi*	-	-	+	-	-	-	-
23	*Jingini*	-	+		-	-	-	-
24	*Tamala*	-	-	-	-	-	-	-
25	*Tooni*	-	-	-	-	-	-	+
26	*Bhurja*	-	-	-	-	-	-	-
27	*Palasha*	-	-	+	-	-	-	+
28	*Shalmali*	-	-	-	-	-	-	-
29	*Mocharasa*	-	-	-	-	-	-	+
30	*Kootashalmali*	-	-	-	-	-	-	-
31	*Dhava*	-	-	-	-	-	-	-
32	*Dhanvanga*	-	-	-	-	-	-	-
33	*Karira*	-	-	-	-	-	-	-
34	*Shakota*	-	-	-	-	-	-	-
35	*Varuna*	-	-	+	-	-	-	-
36	*Katabhi*	-	-	+	-	+	-	-
37	*Mokshaka*	-	-	+	-	+	-	-
38	*Jalashirshaka*	-	-	-	-	-	-	-
39	*Shami*	-	-	+	-	-	-	-
40	*Saptaparna*	-	-	+	-	-	-	-
41	*Tinisha*	-	-	+	-	-	-	-
42	*Jaarul*	-	-	-	-	-	-	-
43	*Bhumisaha*	-	-	-	-	-	-	-

Table. No. 5: *Dravyas* with their *Karma* [15].

Sl. No	*Karma*	No of *Dravyas*	*Dravya*
1	*Yonidoshahara*	3	*Vata, Plaksha, Shala*
2	*Yonishodhana*	2	*Jingini, Ashwatha*
3	*Krimihara*	14	*Parisha, Shala, Bijaka, Khadira, Irimeda, Babbula, Ingudi, Palasha, Varuna, Katabhi, Mokshaka, Shami, Sptaparna, Tinisha*
4	*Garbhapatana*	2	*Shimshipa, Arishtaka*
5	*Shukrahara*	2	*Katabhi, Moksha*
6	*Shukrastambhana*	1	*Shirisha*
7	*Vrushya*	4	*Putranjiva, Tooni, Palasha, Mocharasa*

DISCUSSION:

***Yonidoshahara, Yonishodhana, Krimihara* action:**

Yonidosha refers to any kind of structural and functional abnormality related to female reproductive system. The commonest abnormalities are menorrhagia, metrorrhagia, leucorrhoea etc. If these are not treated in acute stage, they may lead to long-term complications in women such as infertility, ectopic pregnancy and pelvic inflammatory diseases. So early diagnosis and restoring the reproductive health is very essential.

Yonidoshahara drugs have *Kashaya rasa, Shita Virya, katuvipaka* and *Kaphapittahara* property. These properties help to reduce the abnormal vaginal discharge like leucorrhoea, menorrhagia and metrorrhagia.

The drugs of *Vatadi varga* which comes under *Yonishodhana* group are *Ashwatha* and *Jingini.* They have Kashaya rasa, Ushna Virya, Ruksha guna and Kaphahara property.

Ashwatha has been proved for its Antimicrobial, anti-inflammatory and anti-oxidant

property [16] so it can be used as *Yonishodhana* drug in conditions of pelvic inflammatory diseases and other abnormal vaginal discharge.

The drug *Asana* (Pterocarpus marsupium) has been experimentally proved to be effective in testosterone propionate induced polycystic ovary syndrome in female albino rats [17]. Thus, the drugs coming under *Vatadi varga* such as *Vata, Ashwatha, Bijaka* etc are having *Yonidoshahara, Yonishodhaka* and *Krimihara*

action can be used in various pathological conditions of female reproductive system.

***Garbhapatana* action:**

It is advised to avoid all *Ushna, Tikshna, Katu, Vatakaraka Ahara, Vihara* and *Aoushadhi* by *acharya's* during *Garbhavastha* [18] as this phase is considered to be *Sukumara* (Delicate). These *Dravyas* reduces *Kapha dosha*, which is required for the *Dharana* of *Garbha* and also development of foetus. These drugs act on uterine muscles, causes contraction leading to abortion [19]. If taken continuously in less quantity causes *Artava* vruddhi and in more quantity leading to *Garbhapatana*.

The drugs *Shimshapa* and *Arishtaka* are *having Katu rasa, Ushna Virya, Katu Vipaka* and *Kaphahara* action. Hence, it's better to avoid these dravyas as single drug or in combination during *Garbhini Avastha.*

***Shukrahara* action:**

The *Dravyas* belongs to this group *(Katabhi, Mokshaka)* are having *Katu rasa, Katu Vipaka, Ushna Virya, Ruksha guna*. These *Gunas* are entirely opposite to *Shukra dhatu gunas* [20] (*Madhura, Shita, Snigdha, Soumya*). As *Shukra dhatu* is *Soumya* in nature, *Agneyatva guna* of *dravyas* reduces the quality of *Shukra dhatu*. Thus, these drugs better to be avoided during infertility treatment and also in *shukrakshayavastha*.

***Shukrastambhana* action:**

Shirisha which is one among *Vatadi varga* has *Madhura, Tikta, Kashaya rasa. Sthambhana Dravyas* act by decreasing the *Saratva guna* and enhancing the *Sthiratva guna* of *Shukra dhatu*. Thus, helps in retention of semen for longer duration. *Shirisha* as it has *Madhura rasa*, it improves the *Bala* (Strength) of body and act as emmenagogue.

***Vrushya* action:**

Generally, *Vrushya Dravyas* are having the *Madhura, Tikta, Kashaya rasa, Shita Virya, Madhura Vipaka, Guru, Snigdha guna*.

Madhura - Improves the muscular strength of reproductive system [21].

Madhura rasa and *Guru guna*- These act as *Dhatupushtikara* and in turn nourishes *Shukra dhatu*. *Madhura rasa* act as *Shukrabhivardhana* [22], hence it plays a role in *Shukra Kshayavastha.*

Snigdha guna- Helps in increasing the volume of the semen.

Sara guna- Helps in improving the motility of sperm. Hence this guna may play a role in oligo and azoospermia conditions.

All the *Vrushya dravya gunas* are found in the drugs *Putranjiva, Tooni, Palasha* and *Mocharasa* of the *Vatadi varga*. Hence these *Dravyas* can be considered as *Vrushya dravya* among the *Vatadi varga* of *Bhavaprakasha nighantu.*

Role of phytoconstituents:

The important phytoconstituents that are observed to be present in drugs belonging to *Vatadi Varga* are mainly tannins, saponins, catechin, quercetin, β-sitosterol, triterpenes etc. Among various diverse therapeutical activities that are attributed to these phytoconstituents, there are certain activities that are important from the point of reproductive system.

Tannins: Tannins are polyphenols that are present in various plants, and potentially contain antioxidant properties that promote reproduction in animals. Apart from these tannins have shown plenty of properties like antimicrobial, anti-inflammatory which probably help in *Yonidoshahara, Yonishodhana* and *Krimighna* activities. One study has also shown how tannic acid affects the activity of antioxidative enzymes, sperm quality, reproductive organ weight, serum sex hormone, and autophagy in the testis of male Brandt's voles [23]. Tannic acid has a dose-dependent effect on the reproductive capability of male Brandt's voles. The lower dose of tannic acid might enhance the development of reproductive organs of male Brandt's voles, whereas the higher dose damage's reproductive function.

Saponins: These may influence hormone levels, including luteinizing hormone and testosterone which could potentially have an impact on fertility [24]. The best example is *Shirisha*, which contains saponin is considered as *Shukrastambhana* in classics. Saponins have been shown to have both positive and negative effects on the viability of human sperm cells invitro with some ginseng saponins increasing motility as well as progression of sperm [25].

Lupeol: Certain drugs in *Vatadi varga* like *Bijaka, Saptaparna* which are mainly considered to have *Krimighna* property have lupeol as one of the constituents. As lupeol is mainly anti-inflammatory, antimicrobial, antiprotozoal, antiproliferative and wound healing in nature, this will contribute not only in *Krimighna* but also wound healing activity [26].

Catechin: Catechin is present in *Khadira, Babbula, Tamala* etc of *Vatadi varga*. antioxidant action of catechin is well established by various invitro, in -vivo and physical methods. Catechin are noted for their diverse biological activities such as anti-obesity, antioxidative, anti-inflammatory, antihyperglycemic and antiatherosclerosis [27].

B-sitosterol: β-sitosterol can regulate endometrial receptivity and sex hormone balance in PCOS-like mice, which may be related to its regulation effect on gut microbiota. β-sitosterol-treated mice contributed to the improvement of PCOS [28].

Flavonoids: These are antioxidants contributes to protect sperm from oxidative stress which can impact sperm health and fertility and spermatogenesis [29].

Quecetine: Act as antistress, antioxidant and improves semen quality. Studies have shown that Oocytes cultured in a medium supplemented with quercetin showed better in vitro maturation and early embryonic development ability. The higher quality of the oocytes, increased the oocyte fertilization rate as well as the blastocyst-formation rate, and resulted in a higher number of high-quality blastocysts [30].

Terpenoids: These have antitumour, anti-inflammatory, antioxidant, neuroprotective, antibacterial, antiviral and antimalarial action [31].

Majority of the phytoconstituents found in *Vatadi Varga Dravyas* appears to contribute in correcting diseases related to reproductive system and also in protecting overall reproductive health.

CONCLUSION:

Among the 43 *Dravyas* of *Vatadi Varga* in *Bhavaprakasha Nighantu*, 3 *Dravya* were found to have *Yonidoshahara*, 2 *Dravyas* have *Yonishodhana*, 14 *Dravyas* have *Krimihara*, 2 *Dravyas* have *Garbhapatana*, 2 *Dravyas* have *Shukrahara*, 1 *Dravya* has *Shukrastambhana*, 4 *Dravyas* have *Vrushya* action. These drugs show their action either individually or in combination.

Further extensive research needs to be done on each drug of *Vatadi Varga* with respect to disease related to reproductive system to validate their action on reproductive health.

REFERANCES:

1. Kulshrestha S, Durrani AM. Prevalence of Menstrual disorders and their association with physical activity in adolescent girls of Aligarh city. Int J Health Sci Res. 2019; 9(8):384-393.
2. Weström L. Incidence, prevalence, and trends of acute pelvic inflammatory disease and its consequences in industrialized countries. Am J Obstet Gynecol. 1980 Dec 1;138(7 Pt 2):880-92. Doi: 10.1016/0002-9378(80)91077-7. PMID: 7008604.
3. https://academic.oup.com/hropen/article/2023/2/hoad007/7066921
4. Krishnachandra Chunekar (commentator), Bhavaprakasha Nighantu of Bhavamishra. Vatadi Varga, verse no. 01-77. Varanasi; Chaukambha Bharati Academy; 2018:501-37.
5. Udhayaraj Suriyakalaa, Rajamanickam et al, Upregulation of Cyp19a1 and PPAR-γ in ovarian steroidogenic pathway by Ficus religiosa: A potential cure for polycystic ovary syndrome, Journal of Ethnopharmacology, Volume 267, 2021, 113540, ISSN 0378-8741, https://doi.org/10.1016/j.jep.2020.113540.
6. Goyal et al., (2013), Anti-fertility activity of Ficus Religiosa Fruits containing bioactive compounds such as Terpenoids, glycosides, flavonoids, serotonergic content. Dec 2013, International

Journal of Drug Development and Research 5(4):330-335.

7. K. Ghosh, T. K. Bhattacharya, Preliminary study on the Antiimplantation activity of compounds from the extracts of seeds of Thespesia populnea, Division of Pharmaceutical and Fine Chemicals Technology, Department of Chemical Technology, University College of Science and Technology, Calcutta University, Kolkata - 700 009.
8. R.S. Gupta, et, al. Effect of Saponins of Albizia lebbeck (L.) Benth bark on the reproductive system of male albino rats, Journal of Ethnopharmacology, Volume 96, Issues 1–2, 2005, Pages 31-36, ISSN 0378-8741, https://doi.org/10.1016/j.jep.2004.07.025.
9. Neeru Vasudeva, Manisha Vats, Anti-spermatogenic Activity of Ethanol Extract of Dalbergia sissoo Roxb. Stem Bark, Journal of Acupuncture and Meridian Studies, Volume 4, Issue 2, 2011, Pages 116-122, ISSN 2005-2901, https://doi.org/10.1016/S2005-2901(11)60017-4.
10. R P Rao KA, et, al. Human sperm DNA damage inhibition and antioxidant activity of T. arjuna bark: an in vitro study. 3 Biotech. 2017 Jul;7(3):188. Doi: 10.1007/s13205-017-0853-z. Epub 2017 Jun 29. PMID: 28664375; PMCID: PMC5491448.
11. Hugar AL, Kanjikar AP, Londonkar RL. A Novel Potential Reproductive Effects of Pterocarpus marsupium Methanolic Extract on Testosterone Propionate Induced Polycystic Ovary Syndrome in Female Albino Rats. Endocr Metab Immune Disord Drug Targets. 2017 Nov 16;17(4):317-323. doi:10.2174/1871530317666170912153934. PMID: 28901866.
12. Bhosale Vivek V, Ashim Ghatak. Clinical evaluation of vaginal contraceptive cream of sapindus mukorossi, CONSAP: a pilot study. Trends in Drug Delivery. 2015; 2(3): 22–24p.
13. Goyal, Lalita et, al. Antispermatogenic effect of Tecomella undulata root extract in male albino rats, Journal of Experimental Zoology India, Jan2023, Vol. 26 Issue 1, p919-927. 9p.
14. Hari Prakash Verma, et, al. Effect of aqueous leaf extract of Dalbergia sissoo Roxb. on spermatogenesis and fertility in male mice, The European Journal of Contraception & Reproductive Health Care, 19:6, 475-486, DOI: 10.3109/13625187.2014.945165
15. Krishnachandra Chunekar (commentator), Bhavaprakasha Nighantu of Bhavamishra. Vatadi Varga, verse no. 01-77. Varanasi; Chaukambha Bharati Academy; 2018:501-37.
16. Damanpreet Singh, Bikram Singh, Rajesh Kumar Goel, Traditional uses, phytochemistry and pharmacology of Ficus religiosa: A review, Journal of Ethnopharmacology, Volume 134, Issue 3, 2011, Pages 565-583, ISSN 0378-8741, https://doi.org/10.1016/j.jep.2011.01.046.
17. Aruna L Hugar, Amarvani P Kanjikar, Ramesh L Londonkar, A Novel Potential Reproductive Effects of Pterocarpus marsupium Methanolic Extract on Testosterone Propionate Induced Polycystic Ovary Syndrome in Female Albino Rats, 2017 Nov 16;17(4):317-323. Doi: 10.2174/1871530317666170912153934.

18. Yadavaji Trikamaji (editor). Charaka Samhita of Charaka, Sharia sthana, chapter 8, verse no.32, 2nd edition, Varanasi; Chowkhamba Sanskrit Sansthan;2021: 346.
19. Yadavji Trikamaji (editor). Charaka Samhita of Charaka, Sharia Sthana, chapter 8, verse no. 32, 2nd edition, Varanasi; Chaukhambha Sanskrit Sansthan;2021: 346.
20. Yadavaji Trikamaji (editor). Charaka Samhita of Charaka, Chikista sthana, chapter 2,4th pada, verse no.50, 2nd edition, Varanasi; Chowkhamba Sanskrit Sansthan;2021: 397.
21. Yadavaji Trikamaji (editor). Charaka Samhita of Charaka, Sutra sthana, chapter 26, verse no 42(1), 2nd edition, Varanasi; Chaukhambha Sanskrit Sansthan;2021: 144.
22. Yadavaji Trikamaji (editor). Charaka Samhit of Charaka, Sutra sthana, 26th chapter, Shloka no 42(1), 2nd edition, Varanasi; Chaukhambha Sanskrit Sansthan;2021: 144.
23. Xin Dai et al, Reproductive responses of the male Brandt's vole, Lasiopodomys brandtii (Rodentia: Cricetidae) to tannic acid, research article, Zoologia (Curitiba) 37-2020, https://doi.org/10.3897/zoologia.37.e52232
24. Benie T., El-Izzi A., Tahiri C., Duval J &Thieu ant M.L.T. Combretodendron africanum bark extract as an antifertility agent: Estrogenic effects in vivo and LH release by cultured gonadotropin cells. Journal of Ethnopharmacology.1990, 29: 13-23
25. Chen J.C., Xu M.X., Chen L.D., Chen Y. N & Chiu T.H Effect of Panax Noto ginseng saponins on sperm motility and progression in vitro. Phytomedicine1998, 5: 289-292
26. Beserra, F.P.; Xue, M.; Maia, G.L.A.; Rozza, A.L.; Pellizzon, C.H.; Jackson, C.J. Lupeol, a Pentacyclic Triterpene, Promotes Migration, Wound Closure, and Contractile Effect In Vitro: Possible Involvement of PI3K/Akt and p38/ERK/MAPK Pathways. Molecules 2018, 23, 23–2819. [Cross Ref] [PubMed]
27. Indian Journal of Biochemistry & Biophysics Vol. 57, October 2020, pp. 505-511 Aditya Ganesh purkar, Ajay Saluja, A Review The pharmacological potential of catechin Indian Journal of Biochemistry & Biophysics Vol. 57, October 2020, pp. 505-511.
28. Yu Y, Cao Y, Huang W, Liu Y, Lu Y and Zhao J (2021) β-Sitosterol Ameliorates Endometrium Receptivity in PCOS-Like Mice: The Mediation of Gut Microbiota. Front. Nutr. 8:667130. doi: 10.3389/fnut.2021.667130
29. Rui-Juan Ye, Jia-Mei Yang, et al, Interplay between male reproductive system dysfunction and the therapeutic effect of flavonoids, Fitoterapia Volume 147, November 2020, 104756
30. Cao, Y.; Zhao, H.; Wang, Z.; Zhang, C.; Bian, Y.; Liu, X.; Zhang, C.; Zhang, X.; Zhao, Y. Quercetin Promotes In vitro Maturation of Oocytes from Humans and Aged Mice. Cell Death Dis. 2020, 11, 965. [Google Scholar] [Cross Ref]

Wenqiang Yang, Xu Chen et al, Advances in Pharmacological Activities of Terpenoids, Natural Product Communications Volume 15(3): 1–13 sagepub.com/journals-permissions DOI: 10.1177/1934578X20903555 journals.sagepub.com/home/npx

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