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Efficacy of Cap. ASHMA-6 with VarunadiKashaya in the management of Urolithiasis (Mutrashmari): A Prospective Clinical Study

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ABSTRACT
Background: Urolithiasis(Mutrashmari) is kapha-vatapradhanavyadhiand about 30% patients suffering from urolithiasis and approximately 5-7 million patients suffer from mutrashmari in India as per recent studies data. VarunadiKashaya herbal formulation explained in Chakradatta mainly indicated specially in Mutrashmari.**Aim:** To evaluate the efficacy of Cap. Ashma-6 &Varunadikashayaand in the management of mutrashmari.**Materials and Methods:** Patients (n = 30) with Mutrashmariwere selected. Patients were administered with Cap. Ashma – 6 (500mg) and VarunadiKashaya (20ml) twice a day for 45 days.Effect of therapy was assessed on the basis of relief in chief complaints (as subjective criteria) with the help of scoring pattern and objective criteria such as decrease in the serum albumin, serum uric acid and the blood urea, restoration to normal value ranges of routine and microscopic urine test examination, routine haematologic examinations (CBC, ESR), X –ray KUB and USG KUB. **Result:** Thus in total Cap. ASHMA-6 withVarunadiKashayaformulation has the capacity to disintegrate the pathogenesis of the disease Mutrashmari due to its diuretic action and flushes out the disintegrated Mutrashmariby the process of diuresis.**Conclusion:** Cap. ASHMA-6 withVarunadiKashayaeffective in reducing subjective and objective criteria of Urolithiasis(Mutrashmari), improving the quality life of affected person, cost effective and safe to use.

Keywords:Cap.ASHMA-6, Mutrashmari,Urolithiasis, VarunadiKashaya

I. INTRODUCTION

AcharyaSusruta, the pioneer in the art and science of surgery has described widely and comprehensively about Mutrasmariis one of the most common urinary disorders along with its classification, symptomatology, etiology, pathology, complications and its management[1].Formation of urinary calculi is described in Ayurvedika scriptures Mutrasmari[2]. Even today, it appears that the ancient Acharya's diagnostic section regarding calculi is accurate.Formation of Mutrasmari, according to Susruta, is due to SrotoVaigunya resulting from Dusitakapha localized in Basti, in conjunction with PradusitaVata and Pitta[2]. Mutrashmari or urinary stone is a most painful & common disease of the urinary tractdue to kidney stone. Mutraashmari is very high incidence occurring due to the high mineral content of water and hot climate.

About 30% patients found suffering from urolithiasisdue to urinary disorders. In India approximately 5-7 million patients suffer from mutraashmari& at least 1/1000 of Indian population need to hospitalization due to kidney stone disease[3]. In Asanshodhanasheelapersons, one who does not followsShodhana (purification) treatment and who is Apathyakaari(uses un whole some items), ShleshmaDosha gets aggravated, and saturates the urine in system. This saturated urine (ShleshmaYuktaMutra) is the material (cementing substance) is the main cause for formation of urinary stone. Through urine different stone forming Doshas – like Vata, Pitta&Kapha come from the system and along with the cementing substances they form urinary stone of particular Dosha involved[3]. Modern science consider the involvement of various type factors like heredity, age, sex, metabolic disorders, sedentary life style, hydration status, mineral content of water nutritional deficiency etc for urinary stone formation. Urolithiasis mainly occurs in middle age 30-45 years.

SushrutaSamhitahas described management of various types of Ashmariin view of the fatality of the disease. Treatment has been advised to be undertaken in the early stages of the

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disease[4].Ghrita recipes for three types of calculi have been mentioned along with indication of appropriate food, drinks and other measures. Indication for the surgical management has been given along with a note of caution regarding its dangers and doubtful chances of success. It was to be undertaken only on failure of conservative treatment and when death was inevitable if not treated surgically[4]. These treatments can cure urolithiasis, but they are unable to stop the pathophysiology that leads to stone development. So, recurrence of stone even after removal is becoming a great problem and constant efforts are being made to evolve an effective treatment as well as prevention of recurrence of the disease. In Ayurveda, various useful herbal treatments and management for urolithiasis had been mentioned.

Cap. ASHMA-6 with VarunadiKashayashowedthedominanceofkatu (pradhana rasa) – tikta, madhura, kashaya rasa, katuvipaka, ushnaviryawith the dominanceoflaghu, rukshnaandsnigdhagunafollowedby guru andtikshnagunawithkapha-vatashamakapropertyanddominanceof depana, pachana, followedby mutrala,anulomana, vatanulomana, bhedhana, kapha-nihsaraka, andashmarinashanakarmas.Both Cap. ASHMA-6 with VarunadiKashayacan be helpful to destroy the etiopathogenesis of the disease. So, this study was planned (undertaken) to evaluate and compare the clinical effect of Cap.ASHMA-6 with VarunadiKashayain patients suffering with the Urolithiasis (Mutrashmari).

II. MATERIALS AND METHODS

Study design

It was an interventional, open labelled, simple random sampling, computer generated randomizedcomparative clinical trial. Written informed consent was taken from all the patients in the trial. Patients (n = 30) with Mutrashmariwere selected from O.P.D. & I.P.D. of Govt. M.M.M. hospital, Udaipur and were randomly divided into two groups (Group A and B) using computer generated randomization chart.

Inclusion criteria

- ✓ Age between 18 to 70 years
- ✓ Ultra sonological evidence of single calculus / multiple calculi ≤ 10 mm, present in kidney(s)/ ureter (s) / urinary bladder.
- ✓ Willing and able to participate for study.
- ✓ Patients with signs and symptoms of Mutrashmari were included in the study.

Exclusion criteria

- ✓ Age less than 18 years and more than 70 years
- ✓ Patients with age less than 18 years and more than 60 years.
- ✓ Patients suffering from type 1 & type 2 diabetes, hypertension, CNS disorders.
- ✓ Drug induced dyslipidemia.
- ✓ Systemic illness like tuberculosis, carcinoma and thyroid disorders.
- ✓ Patients having features of chronic kidney disease (CKD), congestive cardiac failure (CCF).
- ✓ Patients having the past history of myocardial infarction (MI) and unstable angina.

Investigation

- ✓ Routine haematologic examinations (CBC, ESR) were carried out before and after treatment to rule out any pathological conditions.
- ✓ Bio- chemical test such as serum albumin, serum uric acid and the blood urea were carried out.
- ✓ Routine and microscopic urine test examination were carried out.
- ✓ X –ray KUB and USG KUB were carried out.

Drugs and posology

Details of drug and posology as given below in (Table 1,2,3):

Table 1: Details of drug and posology

Drugs	**Cap. Ashma-6**	**VarunadiKashaya**
Contents	Tila, Apamarga, Kadali, Palasha, Amalaki, Yavakshara	Varuna, Paashanbhed, Sunthi, Gokshura, Yavakshara
Dose	500 mg b. d.	20 ml b.d
Duration	45 day	45 day
Sahapana	Luke water	

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Table 2: Ingredients of 'Cap. Ashma-6'

Sr. No.	Drug name	Botanical name	Part used	Proportion
1.	Tila	Sesamumindicum	Panchanga	1 Part
2.	Apamarga	Achyranthesaspera	Panchanga	1 Part
3.	Kadali	Musa paradisiaca	Moola	1 Part
4.	Palasha	Buteamonosperma	Panchanga	1 Part
5.	Amalaki	Emblicaofficinalis	Panchanga	1 Part
6.	Yava	Hordeumvulgare	Panchanga	6 Part

Table 3: Ingredients of 'VarunadiKashaya[5]'

Sr. No	Name of the Ingredient	Botanical name/ English Name	Part used	Proportion
1.	Varuna	Crataevareligiosa	Bark	1 Part
2.	Pashanbheda	Berginialigulata	Leaf	1 Part
3.	Shunthi	Zingiberofficinale	Rhizome	1 Part
4.	Gokshura	Tribulusterrestris	Root	1 Part
5.	Yavakshara	KOH		0.025 Part

Criteria for assessment of the total effect of therapy

The overall effect was assessed on the basis of relief in chief complaints (as subjective criteria) with the help of scoring pattern and objective criteria such as decrease in the serum albumin, serum uric acid and the blood urea, restoration to normal value ranges of routine and microscopic urine test examination, routine haematologic examinations (CBC, ESR), X –ray KUB and USG KUB.Assessment - The observations were noted down regularly on 15th and 30th day and Follow-up every 15 day for further 45 day.

On following criteria, the overall effect was assessed:

- ✓ Good response – 75% and above relief
- ✓ Fair response –50% to 74% relief
- ✓ Poor response –< 50% relief
- ✓ No response – No relief

Statistical analysis

Percentage analysis was applied to general observations and demographic data. To analyse the effect of individual therapy within the groups, the Wilcoxon signed rank test method was used to check the significance of the subjective criteria and paired t test for objective criteria in a single group. The obtained results were interpreted as, insignificant P > 0.05 (N.S.), significant P = 0.01-0.05 (*S), very significant 0.001 – 0.01 (**V.S.), extremely significant P = 0.0001 – 0.001 (*** E.S.), P < 0.0001 (**** E.S)

Observations

Out of 30 patients, the maximum (40%) belonged to age between 31-40 yearswhile 26.66% patients belonged to age group of 18–30 years. 63.33% and 36.66% patients were male and female respectively. Majority of the patients 96.66% were Hindu. 86.66% of patients were married. It was observed that, 33.33% patients were in service, 23.33% were housewives, while 20% were students in this study. Most of the 46.66% patients belonged to middlesocio- economic status. Majority of the patients 50% were vegetarian and mixed type of diet. In Nidanas, Ahara was found to be dominant in Madhura(56.66%)and LavanaRasa(26.66%), and Vishamagni(40%) were found most inappropriate in patients. Most of the patientsi.e 83.33% were having madhyamkostha. Maximum patients (63.33%) were addicted to tea/coffee.

DashavidhaPariksha revealed that 63.33% of the patients had VatapradhanaKaphanubandhiShariraPrakriti,73.33 % patients were of Madhyama VyayamaShakti. In NidanaSevana, it was observed that all the patients i.e.100% Asansodhansila,followed by 60% Apathyasevana,50% had Mansa sevna,46.66% had guru ahara,33.33% Tiksnaahara, 33.33% Matsyasevana, 23.33% Madhuraahara, sitahara, 13.33% Ativyama & MutrarodhaMadyaSevana.

On modern subjective parameter, 30 patients (100%) of mutrasmari were having the pain, 14 patients 46.66% had tenderness in renal angle, 12 patients 40% each had burning urination, 6 patients were found nausea & vomiting, 4 patients were found fever, 20 patients were found pus cells urine, 12 patients were found hematuria. On Objective

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parameter, it was found that the maximum i.e. 70% patients were having stone kidney. Maximum no. of patients i.e. 60% had multiple stone. Maximum i.e. 66.66% patients were having stone of 4.6 to 10 mm in size.

III. RESULTS

Table 4: Effect of therapy on subjective criteria

Variables	Mean			% relief	SD	SE	P	Sig.
	BT	AT	Diff					
Pain	1.56	0.466	1.100	70.21	0.069	0.0111	<0.001	HS
Burning urination	0.73	0.133	0.6	81	0.394	0.0718	<0.001	HS
Dysuria	0.73	0.233	0.533	72	0.25	0.455	<0.001	VS
Tenderness in renal angle	1.20	0.333	0.866	72.22	0.0047	0.0008	<0.001	HS
Frequency of micturition	0.93	0.400	0.533	57.12	0.22	0.041	<0.001	HS

The data reveals that maximum relief in **pain** was found in the patients of 70.21%, there was highly significant. Mann-Whitney U-statistic = 98.00, P value <0.0001. Maximum relief in **burning micturition** was found in the patients of 81%, there was highly significant. Mann-Whitney U-statistic = 234.00, P value < 0.0002. Maximum relief in **Dysuria** as found in the patients of 72%, there was very significant. Mann-Whitney U-statistic = 256.00, P value < 0.0011. Maximum relief in **Tenderness in renal angle** was found in the patients of 72.22%, there was highly significant. Mann-Whitney U-statistic = 130.00, P value < 0.0001. Maximum relief in **Frequency of micturition** was found in the patients of 72.22%, there was highly significant. Mann-Whitney U-statistic = 273.00, P value = < 0.0018 (Table 4).

Table 5: Effect of therapy on objective criteria (Non-parametric data)

Variables	Mean			% relief	SD	SE	P	Sig.
	BT	AT	Diff					
Stone size Reduction	3.5	1.75	1.8	51.42	1.02	0.189	<0.001	HS
Haematuria	0.57	0.100	0.46	80.70	0.47	0.42	<0.002	VS
Pus cell in urine	1.16	0.53	0.633	54.24	0.33	0.066	<0.008	VS

The data reveals that maximum relief in Stone size reduction was found in the patients of 51.42%, there was highly significant. Mann-Whitney U-statistic = 196, P value < 0.001. Maximum relief in Haematuria was found in the patients of 80.70%, there was very significant. Mann-Whitney U-statistic = 307.50, P value. Maximum relief in pus cell in urine was found in the patients of 54.24%, there was very significant. Mann-Whitney U-statistic = 299.50, P value <0.008 (Table 5)

Table 6: Effect of therapy on objective criteria (parametric data)

Variables	Mean			% relief	SD	SE	T	P	Sig.
	BT	AT	Diff						
Serum Creatinine	0.91	0.62	0.3	32.96	0.23	0.04	7.17	<0.001	HS
Hb	12.58	12.56	0.017	0.14	0.85	0.15	0.107	0.46	NS
TLC	6934	6790	144.67	2.08	359.94	65.71	2.20	0.017	S
ESR	25.53	22.83	2.70	10.57	2.40	0.43	6.13	<0.001	HS

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Uric Acid	4.26	3.77	0.49	11.50	0.319	0.058	8.43	<0.001	HS
Calcium	9.27	8.38	0.89	9.6	0.4925	0.089	9.58	<0.001	HS
Albumin	4.73	4.41	0.32	9.6	0.229	0.041	7.65	<0.001	HS

The data reveals that maximum relief in **serum creatinine** was found in the patients of 32.96%, there was highly significant. Paired T test, P value < 0.0001, T value = 7.17. Maximum relief in **Haemoglobin** was found in the patients of 0.14%, there was no significant. Paired T test, P value. Maximum relief in **TLC** was found in the patients of 2.08%, there was significant. Paired T test, P value < 0.017, T value = 2.20. Maximum relief in **ESR** was found in the patients of 10.57%, there was Highly significant. Paired T test, P value < 0.001, T value = 6.139. Maximum relief in **Uric acid** was found in the patients of 0.14%, there was Highly significant. Paired T test, P value < 0.001, T value = 8.43. Maximum relief in Serum calcium was found in the patients of 9.6%, there was highly significant. Paired T test, P value < 0.0001, T value = 9.58. Maximum relief in Albumin was found in the patients of 6.76%, there was highly significant. Paired T test, P value < 0.46, T value = 7.65 (Table 6).

Overall effect of therapy

The data of the present study shows that 15 patients (50%) showed cured, 03 patients (10%) showed Moderate improvement, 09 patients (30%) showed Mild improvement and 03 patient (10%) showed no response.

IV. DISCUSSION

The aim and purpose of this clinical study was to evaluate the efficacy of Cap.ASHMA-6 with VarunadiKashayain Urolithiasis (Mutrashmari). The finding of the study shows significant change in correcting Urolithiasis by provided highly significant relief in pain 70.21% & burning micturition 81%, tenderness in renal angle 72.22%, frequency of micturition 72.22% relief.According to latest research on Cap.ASHMA-6 whichcontain six drugs such as tila, apamarga, kadali, palasha, amalakiandyavakshara.Tilahaving analgesic, wound healing property[6]. Apamargaalso are diuretic, anti-inflammatory, anti-microbial, asmarihara[7].Palashahaving anti-nephrotoxicity[8].Amalakihaving diuretic, anti-inflammatory, anti-microbial activity[9].Yavakshara having carminative, ashmari&mutrakrcchra roganasaka[10].VarunadiKashayacontainvarunahavin g lithotriptic property ashmari & mutrakrcchraroganashaka. Pasanabheda also diuretic ashmari&mutrakrcchraroganashaka.Sunthihaving anti-inflammatory, antimicrobial, anti-tuberculosis action.

The relief in pain was observed might be due to vedanasthapaka properties of varuna, pasanbheda, shunthi, and gokshura, shothahara properties of varuna, pasanbheda, gokshuraand Vatanulomana properties of varuna and shunthi, ushnavirya of varuna, shunthi, Cap. ASHMA-6 is ushnatikhna, pachana, darana. Due to madhura rasa of varuna, gokshura and madhuravipaka of shunthi, gokshura, and sheetavirya of pasanbheda, gokshurarelief in burning micturition might be observed. Relief in dysuria might be due to vatanulomanaproperty of varuna and shunthi. mutrala property of various ingredients of ASHMA-6, varuna, pasanbheda, gokshura and mutrakrichchhrahara property of various ingredients ASHMA-6, varuna, pasanbheda. Relief in Tenderness in renal angle was might be due to dahana, pachana, daranavilayna, ushna, tikhna and vedanasthapaka property of various components of ASHMA-6, varuna, pasanbheda, shunthi, and gokshura. Relief in Frequency of micturition might be due to varuna, pasanabheda and goksura property mutrala, so increase of efficacy of urine.

On Objective criteria, it was observed highly significant stone size reduction 51.42%, there was very significant relief in Haematuria%, & pus cell in urine 54.24%. Highly significant serum creatinine 32.96%, Hemoglobin 0.14% no significant relief, TLC 2.08%, significant, ESR 10.57%, Highly significant, Uric acid 0.14%, Highly significant, Serum calcium 9.6% highly significant, in Serum Albumin6.76%,highly significant. The above observed effect on Hematuria might due to Sodhana, Ropana, Mutrala, property of various component of Cap.Ashma-6 &varuna, pasanbheda, gokshura and pitta shamak effect of palasha and amalaki.Pus cell count of urine due to sodhana, ropana and antimicrobial property of apamargaand Amalaki.Mutrala, property of various component of ASHMA-6 &varuna, pasanbheda, gokshura.

Reduction in Size of calculus and no. of calculus due to the ushnaguna, tikshna, katu& various karma like dahana, pachana, daranvilaynalekhana karma of ingredients of ASHMA-6. bhedana&mutral, bastisodhna,

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ashmarihara property ofvarun, pasanbheda, gokshura&sunthi property have vata-kaphaghana which are responsible to break down sampraptivightana of stone formulation.

The present study shows that 15 patients (50%) showed cured, 03 patients (10%) showed Moderate improvement, 09 patients (30%) showed Mild improvement and 03 patient (10%) showed no response.

Probable mode of action of Cap.ASHMA-6

Urolithiasis (Mutrashmari) is a 'Kapha-Vatapradhanavyadhi', and Acharyas has recommended KaphaghnaandVataghnaaushadhi.The ingredients of ASHMA-6 pacify KaphaDosha by virtue of their TikhnaGuna, KatuVipaka and UshnaVirya. The Lekhana Karma is enhanced by LekhanaDravya as various ksharawhich are ingredients of ASHMA-6. The Properties such as vatanulomana, shothahara and mutralahelp to relieve pain and sthanikashotha.Due to deepana property of drug also helps to increase the Agni, which further check the formation of Ama at Jatharagnilevel. Pachana property of ingredients helps in assimilations of drug in the body in case of Jatharagnimandya. Due to the AshmariBhedana or Ashmariharaproperty of ingredients present in the drugs, stone might be dissolved. Some compounds of the drug act as Mutrala (diuretic) by virtue of their SheetaVirya and Madhura Rasa. All the ingredients of the drug by their Bhedana, Ashmarihara and Kaphahara Karma along with Mutrala Karma, are helpful to reduce the size of the Ashmari and expelled it out from the body.

Probable mode of action of VarunadiKashaya

VarunadiKashaya (Gokshura, Pasanbheda, Varuna, etc.) in good property as AshmariBhedana, Mutralaand VranaRopana and Sunthi property vata-kaphaghana. The ingredients of the compound pacify KaphaDosha by virtue of their RukshaGuna, KatuVipakaandUshnaVirya and also show "Bhedhana" property due to UshnaVirya. The Bhedhana Karma is again enhanced by famous BhedhanaDravya i.e.Yavakshara, which is one ingredient in it[11]. The Vatanulomana, Shothahara and Mutrala properties of ingredients helps to relieve pain and SthanikaSotha. Jwara is also relieved due to the Jwarahara action of Pashanbheda, Varuna and Shunthi. Deepana property of drug helps to increase the Agni, which further check the formation of Ama at Jatharagni level[11]. Because of their Madhur Rasa, SheetaVirya, Gokshura and Varuna, the remaining medications in the compound have mutrala (diuretic) properties. Once more, this formulation contains the well-known mutraladravyasYavakshra and Pashanbheda[12].

Thus in total Cap. ASHMA-6 and VarunadiKashayaformulation has the capacity to disintegrate the pathogenesis of the disease Mutrashmari and due to its diuretic action it flushes out the disintegrated Mutrashmariby the process of diuresis.

V. CONCLUSION

Trial drugs Cap. ASHMA-6 and VarunadiKashaya showed better result on Urolithiasis (Mutrashmari). Therefore, the study proves that administration ofCap. ASHMA-6 and VarunadiKashayawere effective in reducing subjective and objective criteria of Urolithiasis (Mutrashmari), improving the quality life of affected person, cost effective and safe to use.

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COMPETING INTEREST

Authors have declared that no competing interest exist.

REFERENCE

[1]. ShushrutSamhita Sutra sthan 33/4-5, ShushrutSamhita "Ayurveda TattvaSandipika" commentary by KavirajAmbikaduttaShastri part 1st, Chaukhambha Sanskrit Sansthan, Varanasi, Edition Re-print 2012

[2]. ShushrutSamhitaNidansthan 3/24-25, ShushrutSamhita "Ayurveda TattvaSandipika" commentary by KavirajAmbikaduttaShastri part 1st, Chaukhambha Sanskrit Sansthan, Varanasi, Edition Re-print 2012

[3]. ShushrutSamhitaNidan 3/4 , ShushrutSamhita "Ayurveda TattvaSandipika" commentary by KavirajAmbikaduttaShastri part 1st, Chaukhambha Sanskrit Sansthan, Varanasi, Edition Re-print 2012

[4]. ShushrutSamhitaChikitsasthan 7/29, ShushrutSamhita "Ayurveda TattvaSandipika" commentary by KavirajAmbikaduttaShastri part 1st,

International Journal of Pharmaceutical Research and Applications
Volume 9, Issue 6 Nov - Dec 2024, pp: 1256-1262 www.ijprajournal.com ISSN: 2456-4494

Chaukhambha Sanskrit Sansthan, Varanasi, Edition Re-print 2012

[5]. Chakradatta of ShriChakrapanidatta with Vaidyaprabha Hindi Commentry by Dr.IndradevTripahi, Chaukhambha Sanskrit Bhawan, Varanasi, Edition: Reprint 2010.

[6]. API..VOL. .4… page..no1 .SushrutaSamhita Sutra Sthana 11/11, ShushrutSamhita "Ayurveda TattvaSandipika" commentary by KavirajAmbikaduttaShastri part 1st, Publisher Chaukhambha Sanskrit Sansthan, Varanasi, Edition Re-print 2012

[7]. ShushrutSamhitaChikitsasthana 11/11 , ShushrutSamhita "Ayurveda TattvaSandipika" commentary by KavirajAmbikaduttaShastri part 1st, Chaukhambha Sanskrit Sansthan, Varanasi, Edition Re-print 2012. AFI part -1 pagr no.471

[8]. ShushrutSamhitaChikitsasthana 11/11 , ShushrutSamhita "Ayurveda TattvaSandipika" commentary by KavirajAmbikaduttaShastri part 1st, Chaukhambha Sanskrit Sansthan, Varanasi, Edition Re-print 2012. AFI part -1 pagr no.119-20

[9]. Raj. Nighantu. PippalyaidiVarga 6, 255-256, Raj. Nighantu by Sri Narharipandit, sankhyadhar, satish Chandra, Publisher Chaukhambha Sanskrit Sansthan, Varanasi, year of publication 2012, Edition first. API……VOL 4….Page…..165 to..167

[10]. KaiyadevaNighantuhOusadhiVarga 1142-1146, KaiyadevaNighantuhpathyapathyavibodhakah, Editted& Translated prof.priyavratasharma, & guru Prasad sharma, publisher Chaukhambhaorientalia, Reprint 2017. API VOL-1 page no.205-206

[11]. DhanvantariNighantu with Hindi Commentary by Dr.JharkhandeyOjha and Dr.Umapati Mishra, AdarshVidyaNiketan, 1st Edition, 1985.

[12]. Sarma Bandana BaishyaMrina et al. Efficacy of VarunadiKwatha in the management of KaphajaAshmari (Vesical Phosphate Calculus) – A Clinical Study. IAMJ: Volume 1; Issue 2; March – April 2013 p.1-6