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SAFETY STATUS EVALUATION OF VARIOUS AYURVEDIC FORMULATIONS USED FOR ARTHRITIS: A RETROSPECTIVE OBSERVATIONAL STUDY

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ABSTRACT

Background: The safety of Ayurveda medications for long term use in the management of arthritis is always concern for practitioners, patients and policy makers as large number of patients well convinced about its efficacy. The reports of Ayurveda medications induced severe side effect and organ damage sometimes puzzle the practitioners as well as patients. **Objectives:** To evaluate the safety status of Ayurveda formulations used in arthritis in various Ayurveda hospitals. **Methods:** A retrospective observational study was planned and identified arthritis patients who had been prescribed various Ayurveda medications for long duration. The patients those continuously used Ayurveda medications (*Kasaya, vati, Gugulu, Rasa ausadhi*) internally for more than six months and done the pre and post safety laboratory tests were included in the evaluation process. **Result:** No significant change in pre and post treatment profiles of liver enzymes, urea, creatinine, electrolytes, Hb%, Blood pressure and platelet count were found for long term in low dose use of rasa rasayana among arthritis patients those had no other systemic illness. No sign of adverse drug reaction were found in the observed cases by their physicians.

Conclusion: This preliminary observation showed that Ayurveda Medications including Rasa Rasayanas in low dose for long duration are safe therapy in the management of Arthritis.

KEYWORDS

Rasa rasayana, Arthritis, Amavata, Sandhi vata, Vata rakta and Drug safety.

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INTRODUCTION

Ayurveda, a long and widely used traditional medical care in India and has recently popularised worldwide. All marketed Ayurveda product have their indication and contraindication¹. Common people believed that Ayurveda products are safe and

practitioners assumed that their prescriptions are in doubt for their safety and efficacy as very less numbers of randomised control trials, although drug safety is well documented in Ayurveda². The acceptance of Ayurveda in Joint disorders is high demand therefore Ayurveda colleges suggested for Ayurveda specialist clinic in their Outpatient departments³. The efficacy of Ayurveda drugs is equivalent or better in comparison to allopathic immuno suppressive⁴. Ayurveda drugs are anti-arthritic and chondroprotective⁵ and it inhibits the release of inflammatory kinase and upstream gene regulation protein⁶. The mercurial preparations have good efficacy in rheumatoid arthritis and also in osteoarthritis^{7,8}. The long-term use of Ayurveda medications and efficacy in the arthritis is well proved⁹. It is true that absence of uniform treatment protocol and treatment guide lines for Ayurveda in arthritis management, OTC products for arthritis are grown up with attractive promises¹⁰. Ayurveda product contains heavy metals beyond WHO permissible limit and cause health hazards which opens the eye of clinician, researcher and common people¹¹. Many people raised question about its safety and aware about the side effects of Ayurveda and other alternative medicines¹². The reported side effects of Ayurveda medications are diarrhoea, contact dermatitis, thrombocytopenia, altered electrolytes, organ toxicity (liver, kidney and heart)¹³ and sometimes adverse events also¹⁴. The long-term safety study of Ayurveda medications in management of arthritis is not found. Therefore, this retrospective observational study was planned to evaluate the safety of Ayurveda medications in long term management of arthritis, as the observational study is important for evaluating drug safety in recent years. Observational study provides large data base, long follow up period with minimal ethical issue. It is cost effective research and efficient as compared to interventional clinical study¹⁵.

Objectives

To evaluate the safety status of Ayurveda formulations used in arthritis in various Ayurveda hospitals.

MATERIAL AND METHODS

We retrospectively identified arthritis patients who had been prescribed various Ayurveda medications for long duration. The patients those continuously used Ayurveda medications (Kasaya, vati, Gugulu, Rasa ausadhi) internally for more than six months and done the pre and post safety laboratory tests are included in the evaluation process. The patients those had diabetics, hypertension, liver diseases, renal diseases, heart diseases or continued allopathic drug for long term were excluded from the evaluation of this safety study. The commonest types of laboratory tests like-CBC, Liver function, electrolytes and renal functions tests were done before and end of medications along with blood pressure, body weight were considered for observation¹⁶. The adverse effects were observed by the physicians by noting the physical symptoms like-diarrhoea, nausea, dermatitis, dizziness, abdominal discomfort etc.

RESULTS AND DISCUSSION

Total 1172 patients had received Ayurveda medication from three studied centres. Only 84 patients had pre and post labrotory tests as per requirement. But fifteen patients satisfied the inclusion criteria after excluded 69 patients for different reasons. Out of fifteen patients, 10(67%) were female and 05(33%) were male. 11(73%) patients were suffered from Sandhi Vata (OA Kee) and three patient suffered Amavata (RA) and one patient suffered from Vata rakta (Gout). Bruhat vata Chintamani Rasa and Siddha Makardwaja were found the drug of choice in (8/15) maximum cases followed by Rasa Raj Rasa and Bruhat Vata Gajankusha Rasa (6/15) and one patient was used only herbal medications for two years. Six patients continuously used the prescribed medication for nine months without interruption whereas five patients used for six months, three patients used for one year and only one patient used for two years of medications. The medications were well tolerated in all cases except two patients having loose motion after ingestion of Ayurveda medication for 2-3 day. It was subsided without medications (Table No.1).

Maximum patients (11/15, 73%) loose weight after long term used of Ayurveda medication, one patient gain one kg Wight and rest three patients have no change of their body weight. All treated patients haemoglobin was increased and ESR was decreased in all patients. No significant change in pre and post treatment profiles of liver enzymes, urea, creatinine, electrolytes and platelet count were found for long term use of rasa rasayana (Table No.2 and 3). Therefore, Ayurveda medications specially in low dose(125mg) rasa rasayana have no organ toxicity for low term use in the patients of Arthritis.

Discussion

This study is a preliminary report of safety in long term use of Ayurveda Rasa Rasayana in arthritis patients those had no other systemic disorders. Recently Ayurveda drug related hepatotoxicity, liver injury with elevated liver injury was reported^{17,18}. The issue was condemned¹⁹ and one articles was also removed¹⁸. Like other medical system, Ayurveda medications have contraindication and potential adverse effects. But it is not proper to say Ayurveda medication is not safe.

Sometimes organ toxicity may occur due to incorrect and improper (high dose, not purified) use and

prescribed by unqualified practitioners²⁰. Aswagandha was used in fourteen patients for more than six months and no elevation of liver enzyme noted whereas the report of Aswagandha induces severe cholestatic liver injury, which is self limiting²¹ is confused and proved as inconclusive. It is reported that Ayurveda medicines contain toxic heavy metals and toxic reports are published²². One such report of Bruhat Vata chintamani Rasa induced anaemia²³ but low dose of Bruhat vata chintamani Rasa in low dose and long duration was increased hemoglobin instead of anemia in our study. Drug induced electrolyte imbalance had reported²⁴, but our regimen had not altered electrolyte even if long term use in low dose in elderly patients. The body weight of every patients decreased due to diet restriction and increased metabolism. Two patients have loose motion may be due to its anuloma (Purgation) properties. No other physical symptoms were noted by their respective physicians during medication.

Table No.1: Age, sex, diagnosis, Ayurveda drug and duration, and adverse reaction of fifteen observed arthritis patients

S.No	Age/sex	Diagnosis	Name of Ayurveda drug and dose	Duration of	Adverse Reaction
1	51/F	Sandhi Vata	i. Siddha Makardwaja Rasa -125mg one daily OD ii. Yogaraj Gugulu 500mg BID after food iii. Dasamamula Haritaki -10gm at after food at night iv. Aswagandha tab 500mg OD at night after food	Six months	Not found
2	82/M	Sandhi Vata	Do-	One year	Not found
3	53/F	Sandhi Vata	-Do -	Six months	Not found
4	63/F	Sandhi Vata	-Do-	Nine months	Not found
5	43/F	Amavata	i. Bruhat Vata Gajankusa Rasa -125mg OD empty stomach in morning ii. Moha rasnadi Kasaya 30ml BID before food	One year	Loose motion

			iii. Aswagandha tab 500mg OD at night after food		
6	48/M	Amavata	DO	Nine Months	Loose motion
7	62/F	Sandhi Vata	i. Bruhat Vatachintamani Rasa -125mg one daily OD ii. Yogaraj Gugulu 500mg BID after food iii. Dasamamula Haritaki -10gm at after food at night iv. Aswagandha tab 500mg OD at night after food	One year	Not found
8	50/M	Sandhi Vata	-Do-	Nine months	Not found
9	50/F	Sandhi Vata	-Do-	Nine months	Not found
10	67/F	Sandhi Vata	-Do-	Six months	Not found
11	64/F	Sandhi Vata	i. Rasa Raj Rasa -125mg OD in morning empty stomach ii. Yogaraj Gugulu 500mg BID after food iii. Dasamamula Haritaki -10gm at after food at night iv. Aswagandha tab 500mg OD at night after food	Six months	Not found
12	55/F	Sandhi Vata	-Do-	Nine months	Not found
13	73/M	Sandhi Vata	-DO-	Six months	Not found
14	50/F	Amavata	i. Bruhat Vata Gajankusa Rasa -125mg OD empty stomach in morning ii. Moha Rasnadi Kasaya 30ml BID before food iii. Aswagandha tab 500mg OD at night after food	Nine months	Not found
15	47/M	Vata Rakta	i. Kaisara Gugulu -500mg BID after food with luke warm ii. Kokilasyadi Kasaya 30ml BID before food iii. Punnavaga gugulu -500mg Twice daily after food	Two years	Not found

Table No.2: Pre-treatment parameters of fifteen observed cases of Arthritis

S.No	Pre-treatment parameters																
	Wt.	BP	Hb%	ESR	TLC	PLT	SGOT	SGPT	Urea	Cr	Na ⁺	K ⁺	Ca ⁺⁺	Cl ⁻	FBS	Hb ₁ C	TSH
1	72	130/84	10.8	18	7600	4.10X10 ³	23.2	32.6	26.4	0.86	136	3.6	7.6	97	98	6.2	4.75
2	78	132/82	12.8	22	7200	4.13X10 ³	30.4	33.2	36.2	0.67	138	3.8	8.8	99	84	5.8	3.84
3	66	130/84	10.8	10	7800	3.12X10 ³	23.2	32.6	23.4	0.86	140	3.7	8.5	97	88	6.0	3.75
4	68	132/82	12.8	12	8200	4.23X10 ³	22.4	32.2	16.2	0.67	137	3.9	8.6	101	74	5.2	4.44
5	72	122/78	9.8	110	9600	2.60X10 ³	32	35	37	0.87	142	4.4	8.8	105	88	6.8	5.0
6	70	122/80	10.2	82	9800	2.80X10 ³	27	33.2	24	0.52	136	3.7	9.2	110	78	6.4	3.8
7	79	130/84	11.4	20	8400	3.16X10 ³	24	30.2	28	0.84	137	3.6	8.8	112	110	6.9	4.2
8	84	132/84	12.2	22	7900	4.15X10 ³	23.2	32.6	23.4	0.86	140	3.7	8.5	97	88	6.0	3.75
9	66	132/82	10.2	12	6700	2.22X10 ³	22.4	32.2	16.2	0.67	137	3.9	8.6	101	74	5.2	4.44
10	72	134/78	11.2	19	7600	3.16X10 ³	32	35	37	0.87	142	4.4	8.8	105	88	6.8	5.0
11	71	124/78	10.8	14	6800	4.20X10 ³	27	33.2	24	0.52	136	3.7	9.2	110	78	6.4	3.8
12	88	130/80	11.2	16	7600	3.85X10 ³	24	30.2	28	0.84	137	3.6	8.8	112	110	6.9	4.2
13	69	126/86	11.4	18	7400	2.15X10 ³	33	40	36	0.89	140	3.2	8.1	110	112	7.0	3.8
14	56	112/70	8.8	112	9600	2.10X10 ³	32	33.2	37	0.87	142	4.4	8.8	104	108	6.2	4.3
15	63	122/74	9.2	12	8600	2.12X10 ³	33	37.4	45	1.1	160	3.9	8.4	112	78	6.5	3.8

Table No.3: Post-treatment parameters of fifteen observed cases of Arthritis

S.No	Pre-treatment parameters																
	Wt.	BP	Hb%	ESR	TLC	PLT	SGOT	SGPT	Urea	Cr	Na ⁺	K ⁺	Ca ⁺⁺	Cl ⁻	FBS	Hb ₁ C	TSH
1	70	130/80	11.2	16	6500	4.12X10 ³	24.2	32.6	28.4	0.42	138	3.6	7.6	97	98	6.2	4.23
2	72	130/84	12.4	24	5200	4.20X10 ³	28.4	25.4	32.2	0.69	135	3.8	8.8	99	84	5.8	3.84
3	65	130/84	11.8	10	6800	3.12X10 ³	24.2	22.6	23.4	0.85	142	3.7	8.5	97	88	6.0	3.75
4	68	132/82	12.6	12	5200	4.23X10 ³	20.4	30.2	16.2	0.63	135	3.9	8.6	101	74	5.2	3.44
5	71	122/78	11.8	38	7600	3.60X10 ³	33	25	32.3	0.87	137	4.4	8.8	105	88	6.8	3.57
6	68	122/80	11.2	22	6900	3.80X10 ³	29	30.2	24	0.60	136	3.7	9.2	110	78	6.4	3.8
7	76	140/90	11.6	20	7900	4.16X10 ³	22	28.2	25.6	0.82	137	3.6	8.8	112	110	6.9	4.2
8	76	132/84	12.4	22	7900	4.15X10 ³	28.00	30.6	23.4	0.83	132	3.7	8.5	97	88	6.0	3.75
9	66	132/82	11.8	12	6600	4.22X10 ³	21.40	32.2	16.2	0.70	137	3.9	8.6	101	74	5.2	4.1
10	70	134/78	11.8	19	7200	3.26X10 ³	22	31.2	37	0.88	140	4.4	8.8	105	88	6.8	3.9
11	71	124/78	12.00	14	7300	4.30X10 ³	25	33.2	24	0.56	136	3.7	9.2	110	78	6.4	3.8
12	85	130/80	11.4	16	6600	3.05X10 ³	26.4	30.0	27.2	0.85	130	3.6	8.8	112	110	6.9	4.1
13	69	126/86	11.6	14	7200	2.95X10 ³	23.2	35	37	0.84	162	3.2	8.1	110	112	7.0	3.8
14	57	122/78	10.8	32	7600	2.60X10 ³	22.4	30.2	33	0.88	143	4.4	8.8	104	108	6.2	4.3
15	61	122/84	11.2	10	7500	3.12X10 ³	24.00	27.4	25	0.78	152	3.9	8.4	112	78	6.5	3.8

CONCLUSION

This preliminary observation showed that Ayurveda Medications including Rasa Rasayanas (in low dose) are safe for long duration therapy in the management of Arthritis. More studies are encouraged.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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