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A comparative clinical study on the efficacy of *Rasna Panchaka* and *Rasna Saptaka Kwata* along with *Murungadi Lepa* (Local application) in the management of *Amavata* (Rheumatoid Arthritis)

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ABSTRACT

Amavata is a chronic inflammatory disorder described in Ayurveda which causes significant impairment in daily functioning due to intense joint pain and stiffness. The present study aims to evaluate the efficacy of *Rasna Panchaka Kwata* along *Murungadi Lepa* and *Rasna Saptaka Kwata* along with *Murungadi Lepa* in the management of *Amavata.* Based on the clinical characteristics, this disease can be correlated with Rheumatoid Arthritis (RA) as described in contemporary medicine. This study was carried out as a randomized, single-blind, parallel-group, comparative clinical trial on 60 patients diagnosed with *Amavata*, admitted to the Inpatient Department (IPD) of National Ayurveda Teaching Hospital, Borella. Assessment on *Amavata* based on classical texts and the fulfillment of 2010 EULAR/ACR criteria for Rheumatoid Arthritis. The patients were randomly allocated into two groups of 30 in each. Group A was given *Rasna Panchaka Kwata* (120 ml) and Group B was given *Rasna Saptaka Kwata* (120 ml), both along with external application of *Murungadi Lepa* twice a day daily for 14 days. After the intervention, comparing the Post data of Group A with Group B it was observed that subjective parameters of the both group like as *Sandi shoola, Sandi shotha, Sandi sthabdata, Aruchi, Thrushna*, and *Jawara*, were statistically highly significant ($p>0.001$) except *Angamarda, Alasya, Apaka, Bahumutratatha*, and *Nidra Viparya*, which were statistically significant with $p <0.05$. Objective parameters were observed that there was an improvement of the mean values of the Rh factor, which is statistically highly significant ($p<0.001$) except ESR, CRP, and Hb count were statistically insignificant, which is $p >0.05$. In the overall improvement of both Group A and B, it has been observed that the majority of the subjective parameters have markedly improvement followed by the intervention of *Rasnadi Sapthaka kwata* along with *Murungadi lepa*. It was proved that the both interventions in the *Amavata* treatment protocol it gives best relief from the disease.

Key words: *Amavata, Murungadi Lepa*, Rheumatoid Arthritis, *Rasna Panchaka Kwata*, *Rasna Saptaka Kwata*

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Introduction

Diseases impact both the physical and psychological dimensions of human health, significantly reducing an individual's quality of life. Among them, *Amavata* is a debilitating disorder described in Ayurveda, characterized by the simultaneous aggravation of *Ama* and *Vata dosha* (biological air humor). These pathological entities are primarily localized in *Trika Sandhis* (Bahu & Shetty, 2005), manifesting as severe joint pain, swelling, stiffness, and systemic features such as fever (Murthy, 2009). If left untreated, *it* can progress to permanent joint deformities, severely impairing mobility and functional independence, thereby affecting one's productivity and social engagement.

Pathogenetically, both *Ama* and *Vata* contribute significantly to the disease progression, but the improper digestive process *Agnimandya* is the primary initiating factor that leads to the formation of Ama. This *Ama* acts as a bio-toxic agent, precipitating a systemic inflammatory response. Clinically, patients initially present with general malaise (*Angamarda*), fatigue (*Alasya)*, pyrexia (*Jvara*), and joint swelling (*Anga Shunata*) (Murthy, 2009). Without rapid intervention, the disease progresses through *Madhyama Roga Marga* (Ashish, 2017), eventually compromising critical systems such as cardiovascular, gastrointestinal, nervous, respiratory, and renal systems. Chronic and uncontrolled *Amavata* terminates in debilitating disability, emphasizing the need for early diagnosis and effective intervention.

Captivatingly, the disease entity *Amavata* is not referenced in the classical Ayurvedic treatises of *Brihatrayi*, but was first systematically documented in Madhava Nidana during the 9th century CE. In *Madhava Nidana*, it has emphasized that the involvement of major joints as (*Trika Sandhis*) but it was not stated that specific age predilection. Also, it was not mention in any other Ayurvedic classical texts.

From a contemporary biomedical perspective, Rheumatoid Arthritis (RA) exhibits remarkable clinical congruence with *Amavata*. RA is a chronic, progressive, systemic autoimmune disease marked by symmetrical polyarthritis and extra-articular manifestations. Affecting approximately 0.5–3% of the global population (Black *et al,* 2005), RA imposes a multidimensional disease burden encompassing mortality, morbidity, disability, drug toxicity, and economic cost. The peak onset is typically between 30 and 50 years of age. Limited epidemiological data from Sri Lanka report an early RA prevalence of 0.7%. Patho-physiologically (Inoshi *et al,* 2014), RA involves autoimmune-mediated synovial inflammation, which, if untreated, results in cartilage destruction, bone

erosion, and eventual joint deformity. RA with a symptom duration of fewer than six months is defined as early RA, and when the symptoms have been present for more than six months, it is defined as established RA (Chauhan, 2025).

Despite the availability of potent immunosuppressive and anti-inflammatory agents in modern medicine, a definitive cure for RA remains elusive. Current therapeutic strategies primarily focus on symptom suppression, disease activity control, and prevention of further joint damage. Long-term pharmacotherapy is often associated with adverse effects and substantial healthcare costs. The rising incidence of RA may be attributable to modern lifestyle factors such as sedentary habits, poor dietary patterns, and heightened psychological stress, all of which may potentiate inflammatory disease processes.

Ayurveda offers a holistic approach to disease management based on *Samshodhana* (bio-purification) and *Samshamana* (palliative therapy) (Tripati, 2018). *Samshodhana* encompasses procedures such as *Purvakarma, Pradhana Karma* (e.g., Virechana), and post-procedural dietary management (*Samsarjana Krama*), aimed at eliminating morbid doshas. In *Amavata, Langhana*, *Ama Pachana*, and *Rukshana Chikitsa* (dry fomentation) are foundational treatments. *Valuka Sweda* (sand fomentation) and *Upanaha* (poultices) are especially effective for local symptoms. Classical Ayurvedic texts such as *Chakradatta*, *Yogarathnakara*, and *Bhavaprakasha* have emphasized integrative treatment protocols rather than monotherapies, aiming for complete remission without recurrence (Tripati, 2018; Tripati, 2013; Shashtri, 2015). There are research done on *Rasna Saptaka Kwata* for *Amavata,* but it is not found any of research on *Rasna Panchaka Kwata* for *Amavata.* also, no research found on Efficacy of *Rasna Panchaka Kwata* along with *Murungadi lepa* and *Rasna Saptaka Kwata* along with *Murungadi Lepa* for *Amavata*. With this background, the present study was undertaken to understand the efficacy of a classical combination of *Rasnadi Kwata*, which is attributed with the best *Amavatahara* property, taken from *Amavata chikitsadhikara* of Bhavaprakasha and Deshiya Chikithsa Samgraha.

Objective

The main objective of this study is to evaluate the efficacy of *Rasna Panchaka Kwata* along with *Murungadi Lepa* and *Rasna Saptaka Kwata* with *Murungadi Lepa* in the management of *Amavata*.

Specific objectives

The specific objectives are to evaluate the efficacy of *Rasna Panchaka Kwata* along with *Murungadi Lepa* in the management of *Amavata,* to evaluate the efficacy of *Rasna Saptaka Kwata* along with *Murungadi Lepa* in the management of *Amavata*, and to study the comparative effectiveness of *Rasna Panchaka Kwata* along with *Murungadi Lepa* and *Rasna Saptaka Kwata* along with *Murungadi Lepa* in the management of *Amavata.*

Materials and Methods

A total of 60 patients of *Amavata* attended to the IPD/OPD of National Ayurveda Teaching Hospital, Borella, Sri Lanka were selected irrespectively of their gender, caste, etc., consideration of inclusion and exclusion criteria. The study has been obtained ERC from the Ethics Review Committee, Institute of Indigenous Medicine, University of Colombo (ERC 22/135 07.09.2022), and consent from each patient was obtained before starting the course of treatment.

Inclusion criteria

Patients who fulfill the diagnosis criteria of *Amavata* (RA), Both male and female patients in the age group between 20 to 50 years and Chronicity less than 5yrs were included in the study.

Exclusion criteria

Patients less than age 20 years and more than 50 years of age, chronicity of more than 5 years, pregnant and lactating women, patients who have other chronic diseases such as DM, Cancer, OA, and other joint disorders, patients having severe deformities, and patients who are on medicine for gastritis or diagnosed with gastritis were excluded from the study.

Assessment Criteria

Rheumatoid Factor, ESR, C - reactive protein, FBC were the main assessment criteria and done before and after completion of the treatment.

Grouping and posology

Registered patients were divided into two groups randomly using the number table method and assigned to either group A or group B.

Patients of Group A were treated with *Rasna Panchaka Kwata* 120ml orally at 8.00 am and 4 pm, before meal along with *Murungadi Lepa* local application twice a day for 14 days. Patients of Group B were treated with *Rasna Sapthaka*

Kwata 120ml orally at 8.00 am and 4 pm, before meal along with *Murungadi Lepa* local application twice a day for 14 days.

Method of preparation of Medicine

Preparation of *Rasna Panchaka Kwata* (Bulusu, 2017**)**

According to the classical textbook of *Bhavaprakasha,* 12g of each dried rhizome of *Heen Aratta* (*Alpinea calcarata*), dried stem of *Guduchi* (*Tinospora cordifolia*), dried Rhizome of *Vishva* (*Zingiber officinale*), dried roots of *Eranda* (*Ricinus communis*), and dried stem of *Devedara* (*Cedrus deodara*) were added with 1920ml water. The mixture was boiled and reduced to 240 ml to prepare the decoction.

Preparation of *Rasna Sapthaka Kwata* (Bulusu, 2017)

According to the textbook of *Bhavaprakasha,* 8.57g of each of roots *Heen Aratta* (*Alpinea calcarata*), *Guduchi* (*Tinospora cordifolia*), bark of *Aragvadha* (*Cassia fistula*), stem of *Devadaru* (Cedrus deodara), whole plant of *Gokshura* (*Tribulus terrestris*), dried root of *Eranda* (*Ricinus communis*) and dried whole plant of *Punarnava* (*Boerrhavia diffusa*) were added with 1920ml of water. The mixture was boiled and reduced to 240ml to prepare decoction.

Preparation of *Murungadi Lepa* (Kumarasinghe *et al,* 1985)

According to the textbook of *Deshiya Chikitsa Samgraha*, each of the fresh back of *Shigru* (*Moringa oleifera*), the fresh rhizome of *Shunti* (*Zingiber officinale*), the stem of *Devedara* (*Cedrus deodara*), *Sarshapa* seeds (*Brassica juncea*), and the fresh root of Punarnava (*Boerhavia diffusa*) were taken in equal and sufficient quantities, chopped each separately and mixed with coconut vinegar for preparing to final Lepa.

Criteria for Assessment

The symptoms of *Amavata* were considered subjective parameters of assessment.

Table 1: shows the scoring pattern of the assessment criteria based on relief in symptoms

Subjective assessment criteria	Score
Sandhi shula (Joint pain)	
No pain	0
Mild pain (Dose not interfere with most Activities. Abele to adapt to pain psychologically with medication or devices such as cushions)	1
Moderate (Interferes with many activities. Requires life style. But patient remains independent. Unable to adopt to pain)	2
Severe (Unable to engage in normal activities. Patient is disable and unable to Function independently.)	3
Sandi Shotha (swelling)	
No swelling	0
Slight Swelling: moves the joint without pain	1
Moderate Swelling: moves the joint with pain to full extent	2
Severe Swelling: Restricted / No movements	3
Sandi Sthabda (stiffness)	
None	0
Less than 15 mins	1
15 to 30 mins	2
Angamarda (fatigue)	
No body ache	0
Body ache getting better after few minis of activities	1
Body ache getting better after activity towards mid-day	2
Body ache persisting at all times	3
Aruchi (anorexia)	
Appreciate all rasas	0
Appreciate any 4 rasas	1
Appreciate any 2 rasas	2
Doesn't appreciate the taste of food	3
Thrushna (thirst)	
Quantity of water intake > 0-2 liters per day	0
Quantity of water intake > 2-3 Liters per day	1
Quantity of water intake > 3-4 liters per day	2
Quantity of water intake > 4 liters per day	3
Apaka (indigestion)	

No indigestion	0
Heavy foods not digested properly	1
Delayed digestion of lighter foods	2
Impaired digestion of even lighter foods	3
Other Associated complaints (*Gurava, Bahu mutratha,Nidra viparya*)	
No complaints	0
Mild	1
Moderate	2
Severe	3
Very Severe	4

Objective parameters

The following laboratory findings were assessed before and after treatment: Erythrocyte sedimentation rate (ESR) Rheumatoid Factor and C-reactive protein values.

Overall effect of therapy

The overall effect of therapy was assessed on the basis of

Following criteria:

• Marked improvement: >75–<100% improvement

• Moderate improvement: >50–<75% improvement

• Mildly Improved: >25–<50% improvement

Statistical analysis

In the single group, Wilcoxon signed rank test was used to check the significance of subjective parameters and paired sample-test for objective parameters was applied. To compare the effect of therapies in the two groups, independent sample t-test was applied with $p < 0.05$ to be significant.

Follow-up

A month follow-up was taken after treatment to check recurrences.

Results

Results on demographic data

Total 32 patients were registered, in each Group A and Group B. One patient was dropped out from each group.

Table 02: shows the Social- demographic characteristics of the *Amavata* patients

Socio-demographic characteristic		N (%)
Age group	20- 30	17 (22.7%)
	31-40	28 (37.3%)
	41-50	15(20.0%)
Gender	Male	20 (33.3%)
	Female	40 (66.7%)
Living Area	Sadarana	39(52%)
	Anupa	11(14.7%)
	Jangala	10(13.3%)
Civil Status	Unmarried	18(24%)
	Married	35 (46.7%)
	Widow	3 (4%)
	Divorces	4(5.3%)
Race	Sinhala	45(60%)
	Muslim	9(12%)
	Tamil	6(8%)
Religion	Buddhist	38(50.7%)
	Catholic	8(10.7%)
	Islam	8(10.7%)
	Hindu	4(5.3%)
	Burger	2(2.7%)
Occupation	Executive	9(12%)
	Clark	16(21.3%)
	Labor	16(21.3%)
	Non	12(16%)
	Other	7(9.3%)
Education	Below o/l	8(10.7%)
	up to O/L	16(21.3%)
	Up to A/L	25(33.3%)
	Graduated	7(9.3%)

	Post Graduate	4(5.3%)
Economic status	Low	7(9.3%)
	Lower middle	19(25.3%)
	Upper Middle	33(44%)
	Rich	1()1.3%

The 22.7% (n=17) patients were registered for this study the age between 20 to 50years and among them 37.3% (n-27) were age between 31-40 years and 20.0% (n=15) in age between 41-50 years. Majority of them were female patients presenting 66.7% (n=40) while remaining were male. In this study majority of them were living from *Sadarana*, *Anupa* and *Jangla* presenting 52% (39), 14.7% (11) and 13.3% (10) respectively. Also, majority of the sample which is 46.7% (35) were married while the 24% (18) were unmarried, 5.3% (4) Divorces and 4% (3) Widows. In this study nearly 2/3 rd of the participants were Sinhalese presenting 60% (n=45). Others were Muslim and Tamil presenting 12% (n = 9) and 8% (n=6) respectively. Most of the sample were Buddhist 50.7% (n= 38) and others were Catholic 10.7% (n= 8), Islam 10.7% (n = 8), Hindu 5.3% (n = 4), Burger2.7% (n= 2) as their religion. These patients were occupied as Clerk 21.3% (n = 16), Labor 21.3% (n = 16) and 16% (n=12) among them were not occupied. Other of them were 12% (n = 9) Executive while the others 9.3% (n = 7) were doing other categories of work. Education level of the majority was up to A/L 33.3% (25). Economic status of the majority of them were in Upper Middle, Lower middle and Low presenting 44% (n = 33), 25.3% (n = 19 9.3% (n=7) respectively while the less amount presented in rich level 1.3% (n=1).

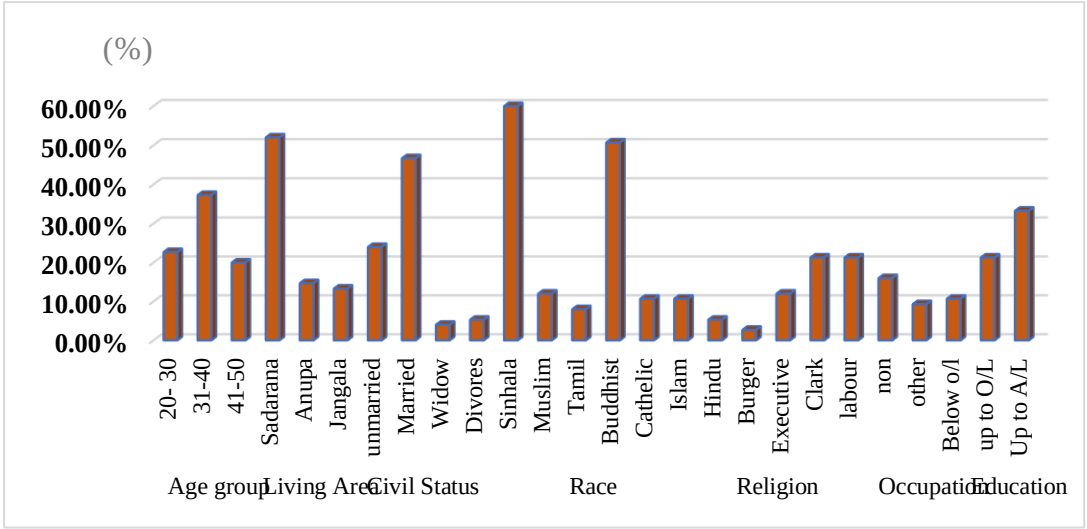

Figure 01: Shows the Distribution of the socio-demographic characteristics

In this study, the majority of the patients were female (66.7%), Married (46.7%), age group between 31- 40 (37.3%). Most of them were from Sadarana (52%) as their living area, their race is Sinhala (60%) and Religion is Buddhist (50.7%). The educational level of the majority was up to A/L and most of them were engaging in as Clark & labours (21.3%) with the Economic Status of Upper Middle (44%).

Table 03: Shows the relationship of *Amavata* with family history

Amavata patients	With family history	With no family history
Group A	3 (5%)	26 (43.33%)
Group B	4 (6.67%)	27 (45%)
Total	7	53

In group A, 43.33% (n=26) patients show not having family history of *Amvata* except 5 % (n=5) of the sample. In group B 45% (n = 27) patients were not having family history for *Amavata* except 6.67% (n =4). Among the all the patients total of 7 shows the relation between *Amavata* with Family history while the 53 of patients shows not relationship between family history with *Amavata*. It has been observed that there is no relationship of *Amavata* condition with the family history which is the p-value is 0.758 ($p > 0.05$)

Table 04: Shows the dietary habits of the *Amavata* patients

Dietary pattern		**N (%)**
Nature food consumes	Natural	47 (78.3%)
	Instant	13 (21.67%)
Diet type	Vegetarian diet	9 (15%)
	Non vegetarian diet	51 (85%)
Frequency of daily consumption of Rasa type excessively (*Athi sewana of Rasa*)	*Madura*	47 (78.3%)
	Katu	7 (11.7%)
	Thikta	2 (3.33%)
	Kashaya	4 (6.67%)
	Amla	0%
	Lavana	0%
Time of Cooking	Cook in time	40 (66.7%)
	Cook for some days	19 (31.7%)
	Cook for week	1(1.6%)
	Sitting near the dining table	3 (5%)

Way of eating	Eat while watching TV and doing any other activities	27 (45%)
	with the family	14 (23.3%)
	Eat too fast	8 (13.3%)
	Eat too slow	2 (3.3%)
	Eat without talking	1(1.67%)
	Eat warm & freshly cooked food	5(8.43%)

In this study among 60 patients 78.3% (n= 47) are having Natural food consume while 21.67% (n=13) are having Instant food found out as Nature of food consume. It has shown that 85% (n= 51) were Non vegetarian diet while 15% (n=9) were Vegetarian. Majority of the sample which was 78.3% (n=47) has taken *Madura rasa Pradhana* Food, 11.7% taken *Katu Rasa Pradhana* Madura 6.67% taken (N= 4) Kashaya Rasa Pradhana foods while 3.33% (n= 2) taken Tikta *Rasa Pradhana Foods* and none of them taken Amla Rasa and *Lavanrasa Pradhana* foods as their Frequency daily consumption of Rasa type excessively (Athi *sewana of Rasa*). It showed that majority of them were 66.7% (n=40) cooking in time, 31.7% (19) cook for some days and 1.6% (1) cooked for week as found out time of cooking. It has showed 45% (n=27) Eat while watching TV and doing any other activities, 23.3% (n=14) eating with family, 13.3% (n=8) Eat too fast, 8.43% (n=5), Eat warm & freshly cooked food, 5% (n=3) Sitting near the dining table, 3.3% (n=2), 1.67% (n=1) Eat without talking as Way of eating

It has been identified that the majority of the patients consume natural food (78.3%), cook on time (66.7%) as good eating habits and non-vegetarian diet (85%), excessively consumption of *Madura* Rasa daily (87.3%), eat during watching the TV and doing any other activity (45%) as bad eating habit.

Table 05: Shows the behavioral patterns of the *Amavata* patients

Behavioral pattern		N (%)
Nidra	*Samanaya*	2 (3.3%)
	Jagarana	18 (30%)
	Athi jagarana	15 (25%)
	Diwanidra	25 (41.7%)
	Regular	2 (3.3%)
	Irregular	23 (38.3%)

Vyayama	Occasional	18 (30%)
	No	17 (28.3%)
Sharama	Physically	35 (58.33%)
	Mentally	25 (41.67%)

Considering the behavioral pattern of the *Amavata* patients 41.7% (n=25) shows *Diwa Nidra,* 30% (n=18) shows *Rathri Jagarana*, 25% (n=15) *Athi Jagarana* 3.3% (n=2) *Samanya Nidra* shows as their way of sleeping. It was observed that 38.3% (n=23) of the participants were doing exercise but doing it was irregularly. 30% (n=18) of them were doing exercise occasionally and 28.3% (n=17) were not doing exercise while 3.3% (n=2) doing exercise regularly. 58.33% (n=35) of the patients were engaged in Physical activities while 41.67% (n=25) engaged in Mental activities.
Majority of them were having *Diva Nidra* (41.7%), doing *vyayama* irregularly (38.3%), and their *Shrama* is mostly based on physical (58.33%) which is *apathy viharana* for these patients.

Aggravating factors of *Amavata* patients

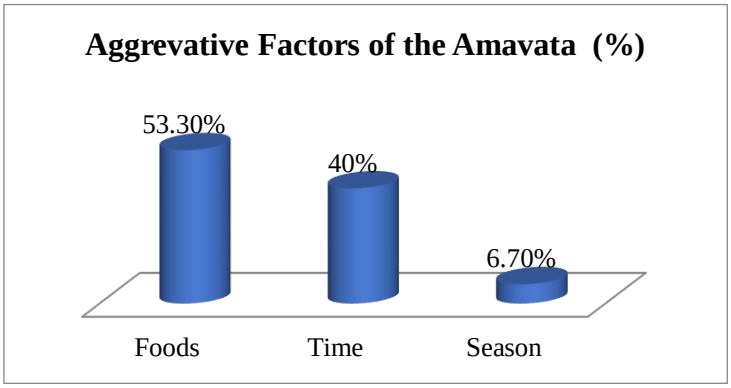

Figure 02: Shows the aggravating factors of *Amavata*

It has observed that the food consumption and the time of the day are the aggregative factors of *Amavata.* This study reflects the majority of the patients has affected their dietary patterns as the aggravating factor and less patients shows the effect of the seasonal changes as aggravating factors

Relieving factors of *Amavata* patients

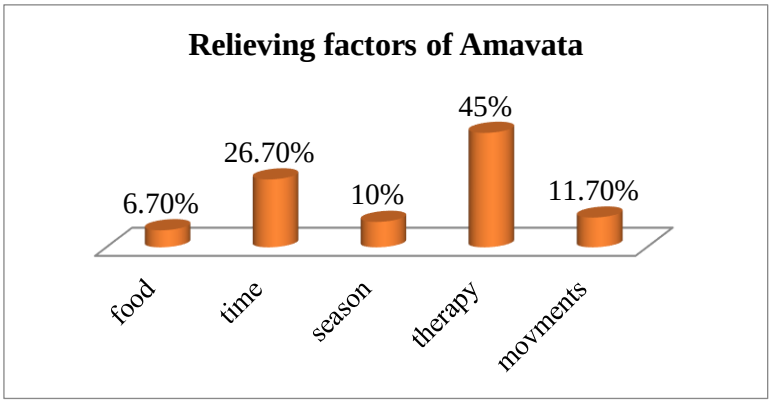

Figure 03: shows the Relieving factors of *Amavata*

It has been observed that any type of treatment therapy and the time of the day are the major relieving factors. It has identified majority of them are got relief from both Ayurveda and modern therapies and minority of them have shown the food as reliving factor in *Amavata.*

Table 06: Shows the distribution of patients according to *Prakriti* type

Prakriti	N (%)
Vata-Kapha	32 (53.33%)
Vata Piita	16 (26.7%)
Kapha Pitta	07 (11.67%)
Kapha-Vatala	05 (8.2%)
Total	60 (100%)

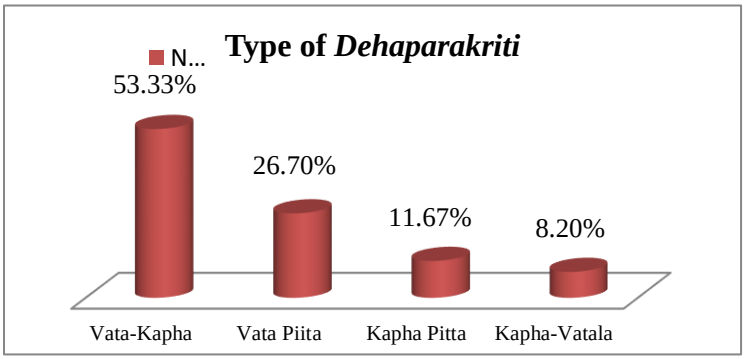

Figure 04: Shows the distribution of *Prakrti* type of *Amavata* patients

The majority of the patients were having *Vata Kapha dehaprakriti* which is 53.33% and minority of them were with *Kapha Vatala prakriti* type (8.20%). Apart from them it was presented the patients with *Vata Pitta* and *Kapha Pitta* patients.

Table 07: Shows the Effect of the *Rasna Panchaka Kwata* along with *Murungadi Lepa* subjective parameters of the *Amavata* patients

Subjective parameter	Mean		SD		SEM		t-value	p-value
	BT	AT	BT	AT	BT	AT		
Sandhi shoola	2.33	0.97	0.661	0.713	0.121	0.131	7.37	<0.001
Sandhi shotha	1.80	0.47	0.610	0.568	0.111	0.104	5.461	<0.001
Sandhi sthabdatha	2.20	0.77	0.583	0.817	0.106	0.149	5.139	<0.001
Angamarda	2.10	0.83	0.548	0.791	0.100	0.145	5.767	<0.001
Aruchi	2.03	0.77	0.890	0.817	0.162	0.149	5.139	<0.001
Thrushna	1.00	0.23	0.843	0.504	0.117	0.92	2.536	<0.05
Alasya	1.93	0.69	0.450	0.563	0.082	0.103	5.835	<0.001
Jvara	1.82	0.84	0.46	0.563	0.085	0.103	3.89	<0.001
Apaka	2.07	0.67	0.785	0.758	0.143	0.138	4.817	<0.001
Bahumutratha	1.47	0.57	0.819	0.450	0.150	0.082	3.247	<0.05
Nidra Viparya	1.43	0.97	0.504	0.183	0.092	0.033	59.00	<0.001

It has shown that the improvement of the mean value of the *Sandi Shoola* from (2.33 to 0.97), *Sandi Sho tha* from (1.80 to 0.57), Sandi Sthabdatha from (2.07 to 0.77), *Angamarda* from (2.10 to 0.83), *Aruchi* from (2.03 to 0.77), *Alasya* from (1.93 to 0.69) *Jvara* from (1.70 to 0.40), *Apaka* from (2.07 to 0.67), and *Nidra*

Viparya from (1.43 to 1.97) was statistically highly significant (p< 0.001) except *Thrushna* and *Bahumutratha* which is statistically significant with the p-value 0.017 and 0.003 respectively. (p<0.05)

Table 08: Shows the Effect of the *Rasna Panchaka Kwata* along with *Murungadi Lepa* Bio-chemical parameters of the *Amavata*

Subjective parameter	Mean		SD		SEM		t-value	p-value
	BT	AT	BT	AT	BT	AT		
ESR	2.6	1.47	0.932	0.629	0.170	0.115	12.775	< 0.001
Hb count	2.13	2.43	0.681	0.504	0.124	0.092	26.444	< 0.001
Rh Factor	1.67	1.07	0.379	0.479	0.379	0.479	19.039	< 0.001
CRP	1.76	1.02	0.085	0.035	0.058	0.085	0.017	< 0.001

It has shown that improvement of the mean value of the ESR from (2.6 to 1.47), Hb count from (2.13 to 2.43), Rh factor from (1.67 to 1.07) CRP value from (1.76 to 0.74) was statistically highly significant (P< 0.001)

Effect of *Rasna Sapthaka Kwata* along with *Murungadi Lepa* on *Amavata*

Table 09: Shows the effectiveness of the *Rasna Sapthaka Kwata* with *Murungadi Lepa,* Subjective parameters of the *Amavata*

Subjective parameter	Mean		SD		SEM		t-value	p-value
	BT	AT	BT	AT	BT	AT		
Sandhi shoola	2.27	0.92	0.640	0.626	0.117	0.114	6.707	< 0.001
Sandhi shotha	1.70	0.37	0.629	0.507	0.115	0.093	5.037	< 0.001

Sandhi sthabdatha	2.10	0.67	0.607	0.794	0.111	0.145	4.826	< 0.001
Angamarda	2.17	0.70	0.592	0.750	0.108	0.137	5.114	< 0.001
Aruchi	2.03	0.77	0.675	0.568	0.123	0.104	4.176	< 0.001
Thrushna	1.00	0.23	0.490	0.183	0.89	0.33	1.000	< 0.05
Alasya	2.10	0.60	0.481	0.675	0.088	0.123	4.817	< 0.001
Jvara	1.67	0.57	0.504	0.490	0.92	0.89	4.097	< 0.001
Apaka	2.13	0.40	0.681	0.563	0.124	0.103	3.890	< 0.001
Bahumutratha	1.31	0.43	0.629	0.305	0.115	0.56	1.795	< 0.05
Nidra Viparya	1.13	0.67	0.507	0.379	0.093	0.069	5.710	< 0.001

It has shown that the improvement of the mean value of the *Sandi Shoola* from (2.27 to 0.77), *Sandi Shotha* from (1.87 to 0.47), *Sandi Sthabda* from (2.10 to 0.70), *Angamarda* from (2.17 to 0.70), *Aruchi* from (2.40 to 0.43), *Thrushna* from (1.03 to 0.03), *Alasya* from (2.10 to 0.60) *Jvara* from (1.57 to 0.37), *Apaka* from (2.13 to 0.40), *Bahumutratha* from (1.47 to 0.10) and *Nidra Viparya* from (1.53 to 0.67) were statistically highly significant ($p< 0.001$) except *Thrushna* and *Bahumuthatha* which is statistically significant.($p>0.05$)

Table 10: Shows the effectiveness of the *Rasna Sapthaka Kwata* with *Murungadi Lepa* Bio-chemical parameters of the *Amavata*

Bo-chemical parameter	Mean		SD		SEM		t-value	p-value
	BT	AT	BT	AT	BT	AT		
ESR	2.67	1.53	1.061	0.776	0.194	0.142	10.82	< 0.001
Hb count	2.30	2.57	0.596	0.504	0.109	0.092	11.05	< 0.001

Rh Factor	1.27	0.73	0.450	0.430	0.082	0.067	14.02	< 0.001
CRP	1.03	0.76	0.450	0.401	0.033	0.024	9.08	< 0.001

It has shown that improvement of the mean value of the ESR from (2.67 to 1.53), Hb count from (2.30 to 2.57), Rh factor from (1.27 to 0.73) CRP value from (1.03 to 0.76) was statistically highly significant (P< 0.001).

Comparative effect of *Rasna Panchaka Kwata* along with *Murungadi Lepa*

Table 11: Shows the Comparative effect of *Rasna Panchaka Kwata* along with *Murungadi Lepa* for *Amavata* on subjective parametres

Subjective Parameters	Groups	N	Mean		Mean diff.	Relief %	SD ±	SE ±	t-value	p-value
			BT	AT						
Sandi Shoola	Group A	30	2.33	0.97	1.360	58.36%	0.673	0.125	4.121	<0.001
	Group B	30	2.27	0.91	1.360	59.91%	0.654	0.117	4.121	<0.001
Sandi Shotha	Group A	30	1.80	0.47	1.330	72.22%	0.568	0.105	3.071	<0.001
	Group B	30	1.70	0.37	1.330	78.23%	0.520	0.102	3.071	<0.001
Sandi Sthabda	Group A	30	2.20	0.77	1.430	65 %	0.632	0.157	2.880	<0.001
	Group B	30	2.10	0.67	1.430	68.09%	0.530	0.146	2.880	<0.001

Angamarda	Group A	30	2.10	0.83	1.270	60.47%	0.677	0.129	3.297	< 0.05
	Group B	30	2.17	0.70	1.270	58.52%	0.501	0.119	3.297	<0.05
Aruchi	Group A	30	2.03	0.77	1.260	62.03%	0.786	0.146	3.413	<0.001
	Group B	30	1.69	0.43	1.260	74.55%	0.626	0.126	3.413	<0.001
Thrushna	Group A	30	1.000	0.23	0.770	77%	0.488	0.139	1.124	<0.001
	Group B	30	1.03	0.26	0.770	59.0%	0.350	0.104	1.124	<0.001
Alasya	Group A	30	1.93	0.69	1.240	64.24%	0.628	0.103	2.155	<0.05
	Group B	30	2.10	0.60	1.240	59.04%	0.540	0.089	2.155	< 0.05
Jvara	Group A	30	1.82	0.84	1.541	84.67%	0.564	0.137	1.201	<0.001
	Group B	30	1.67	0.57	1.541	92.27%	0.455	0.101	1.201	<0.001
Apaka	Group A	30	2.07	0.67	1.400	67.63%	0.435	0.117	1.811	<0.05
	Group B	30	2.13	0.40	1.400	65.72%	0.301	0.008	1.811	<0.05

Bahumut hratha	Group A	30	1.47	0.57	0.880	59.86%	0.738	0,084	0.312	<0.05
	Group B	30	1.31	0.43	0.880	67.17%	0.564	0.054	0.312	<0.05
Nidra Bramsha	Group A	30	1.43	0.97	0.460	32.1%	0.258	0.048	1.321	<0.05
	Group B	31	1.13	0.67	0.460	40.70%	0.167	0.037	1.321	<0.05

Group A- *Rasna Panchaka Kwatha* along with *Murungadi Lepa,* Group B- *Rasna Sapthakaya* along with *Murungadi Lepa*

When comparing the Post data of Group A with Group B It has observed that the improvement of the mean value of the *Sandi Shoola* from (0.97 to. 0.91), Sandi Shotha from (0.47 to 0.37), *Sandi Sthabda* from (0.77 to 0.67), *Angamarda* from (0.83 to 0.70), *Aruchi* from (0.77 to 0.43), *Thrushna* from (0.23 to 0.26), *Alasya* from (0.69 to 0.60), *Jvara* from (0.84 & 0.57), *Apaka* from (0.67 to 0.40), *Bahumutratha* from (0.57 to 0.43) and *Nidra Viparya* from (0.97 to 0.67) has reduced. It was observed that *Sandi shoola, Sandi shotha, Sandi sthabdata, Aruchi, Thrushna, and Jawara,* were statistically highly significant (p>0.001) except *Angamarda, Alasya, Apaka, Bahumutratatha, and Nidra Viparya* which is statistically significant with the p <0.05. Also, it has given good relief in most of the subjective parameters as *Sandhi shoola, Sandi shotha, Sandhi sthabdatha, Aruchi, Jwara and Nidra bramsa* in Group B except *Angamardha, Thrushna* , *Alasya* and *Apaka.*

Table 12: Shows the Comparative effect of *Rasna Panchaka Kwata* along with *Murungadi Lepa* on Bio-medical parameters

Bio-chemical Parameters	Groups	N	Mean		Mean diff.	Relief %	SD ±	SE ±	t-value	p-value
			BT	AT						

ESR	Group A	30	2.67	1.40	1.27	47.56%	0.563	0.103	-762	> 0.05
	Group B	30	2.67	1.53	1.14	42.69%	0.776	0.142	-762	>0.05
Rh Factor	Group A	30	2.23	1.07	1.16	47.98%	0.254	0.046	-2.121	<0.001
	Group B	30	2.30	1.27	1.03	44.78%	0.450	0.082	-2.121	<0.001
CRP	Group A	30	2.33	1.73	0.60	25.75%	0.450	0.082	0.001	>0.05
	Group B	30	2.36	1.73	0.63	26.69%	0.450	0.082	0.001	>0.05
Hb Count	Group A	30	2.38	2.25	0.13	5.46%	0.507	0.093	-766	>0.05
	Group A	30	2.36	2.15	0.21	8.89%	0.504	0.092	-766	> 0.05

When comparing the post data of Group A with Group B It has observed that the improvement of the mean value of the ESR count from (01.40 to. 1.53), Rh factor value from (1.07 to 1.27), CRP value from (0.73 to 1.73) and Hemoglobin count from (2.25 to 2.15) has changed. It was observed that the Rh factor is statistically highly significant ($p<0.001$) except ESR, CRP, and Hb count were statistically insignificant which is >0.05. Also, it has given good relief in objective parameters in both Groups A and B.

Table 13: Shows the Overall improvement of the *Amavata* based on subjective parameters (By Levene's test with 95% confidential interval)

Overall improvement of the *Amavata* after treatment		
	Group A	Group B
Markedly Improved	12 (40%)	14 (46.66%)
Mildly Improved	13 (43.33%)	13 (43.33%)

Moderate Improved	6(16.67%)	3(10.01%)
Total	100%	100%

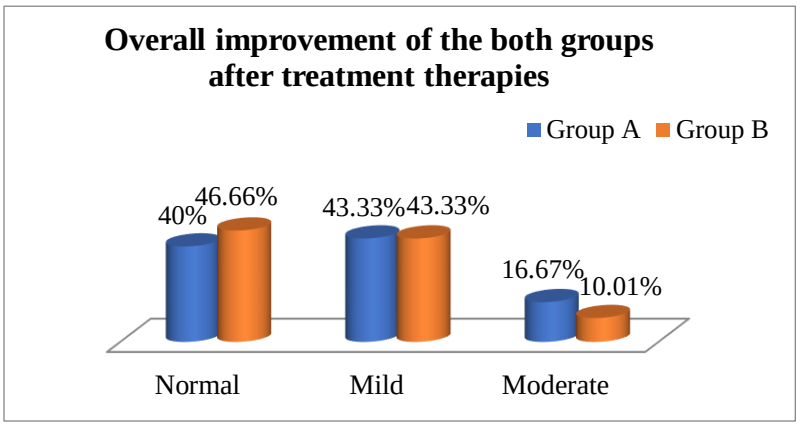

Figure 05: Shows the Overall improvement of the both groups after the treatment therapies for the *Amavata*

When comparing the overall improvement of both Group A and B it has been observed that the majority of the subjective parameters have good improvement following the intervention of *Rasnadi Sapthakaya* along with *Murungadi lepa*.

Discussion

In this study, most of the patients are age group between 31-40 (37.3%), female (66.7%) also living area is urban (52%), civil status is married (46.7%), race is Sinhala (60%) and religion is Buddhist (50.7%). Most of them were passed up to A/L and are clerks and laborers (21.3%) with the economic status of upper middle (44%). A similar study done by Narendra *et al,* 2023 found that different results to this study which is most of their study was age group between 15-25 (35%) and were housewives (46.66%) except the gender (Narendra, 2023). Another similar study done by Roktima *et al,* 2019 found similar results to my study which is the majority of the *Amavata* patients were female 71.95% and the living area was urban (78.04%) except for the age group and the occupation which was age group was between 51-60 and most of them were housewives (Roktima, 2019).

This study has identified that the majority of the patients consume natural food (78.3%), cook on time (66.7%) as good eating habits and non-vegetarian diet

(85%), excessively consumption of Madura Rasa daily (87.3%), eat during watching the TV and doing any other activity (45%) as bad eating habit. A similar study done by (Narendra *et al,* 2023) found different results in this study which was the majority of the *Amavata* patients were vegetarian (58.33%). Also, similar study done by (Roktima *et al,* 2019) found out similar result to this study which is majority of the *Amavata* patients were Non vegetarian (81.7%)

Considering the behavioral pattern of the *Amavata* patients it has been observed that the majority of them do *vyayama* irregularly (38.3%) and their *Shrama* is mostly physical (58.33%). A similar study was done by (Raul *et al,* 2022) found similar results to this study which is the majority of the *Amavata* patients in his study were exercised just after meal and day-sleeping in 81.01% and 62.44% respectively.

In this study, it was observed that most of them had *Vata Kapha prakriti* which is 53.33% and a minority of them had *Kapha Vatala* (8.20%). A similar study done by (Narendra *et al,* 2023) has found similar results to this study as the majority of the *Amavata* patients were in *Vata Kapha Prakriti*. Also, another similar study done by (Rahul *et al,* 2022) found out similar result to this study which is majority of the *Amavata* patients were in *Vata Kapha Prakriti* (53.12%). Another study done by (Nikel *et al,* 2019) also found similar results to this study which is the majority of the *Amavata* patients were *Vata Kapha Prakriti* 55%.

It has identified food as the major aggravating factor in this study which is 53.30%. Also, identified therapy and time are the major relieving factors of pain in *Amavata*. A different study done by (Nikel *et al,* 2019) has found different results to my study which is time as the major aggravating factor and reducing physical activity as the major relieving factor in pain-reducing

The drugs used in the management of *Amavata* should possess *Katu* (pungent) and *Tikta* (bitter) *Rasa* (taste); *Ushna* (hot in potency), *Laghu* (easily digestible), and *Tikshna* (penetrating property through tissues) qualities which are *Vata-Kapha Dosha Hara* and *Amapachaka*. The ingredients of *Rasna Panchaka Kwatha* are *Katu, Thiktha*, *Rasa Ushna Veerya, Thikshna, Lagu guna*, and *Katu Vipaka*, which act against the *Ama Guna* and *Madura Rasa, Guru, Snigda Guna*, and *Madura Vipaka*, which act against Vata dosha and do the *Vata Shaman*. Also, it has *Vata Kapa Shamaka Guna* and *Deepana Pachan Guna* which are act against *Ama* and vitiated *Vata*. Also, according to the pharmacological action of all the ingredients, they have anti- inflammatory, anti-spasmodic, and analgesic actions.

According to the above findings, *Rasna Saptaka Kwatha* has *Madura, Tikta, Katu, Kashaya Rasa Laghu, Rooksha, Thikshna Guna, Ushana Veerya,* and *Karu Vipaka*, which act against *Vata* and *Kapha* conditions. Also, according to the Pharmacological action of all the ingredients, it has anti-inflammatory, antispasmodic, and analgesic actions. *Tikta* and *Katu rasa* drugs have *Deepana* and *Pachana* properties which have a significant role in clearing ama from the body. *Katu rasa* is also known for improving intestinal motility acting as *Vatanulomka*. In terms of *Guna*, these drugs have *Laghu* (light), *Ushna* (hot), and *Tikshna Guna* which are the cause of *Agnivardhaka* (digestive stimulant) properties and therefore after clearing Ama from the body, these drugs clear excess kapha and vata from the body. These drugs further prevent the production of ama and clear blocked channels i.e. *Srotoavarodha* and help to move *Pakva Dosha* from *Sakha* to *Kostha* for removal from the body. Maximum ingredients of *Rasna Sapthaka Kwatha* have *Vata Sleshmahara* property which reduces *doshic Vata* and *Kapha* from the body and reduces the symptoms of *Amavata*. Analyzing of ingredients *Rasa Thiktha rasa Katu rasa, Lagu* & *Guru Guna, Veerya Ushna, Katu vipaka*, anti-inflammatory, anti-inflammatory, anti-inflammatory, analgesic, anti-spasmodic, and anti-apoptosis actions,

In this study, it has shown that the improvement of the mean value of the *Sandhi shoola*, *Sandhi shotha, Sandhi sthabdatha, Angamarda, Aruchi, Alasya, Jvara, Apaka, Nidra Viparya* was statistically highly significant ($p< 0.001$) except *Thrushna* and *Bahumutratha* which is statistically significant with the p-value 0.017 and 0.003 respectively ($p<0.05$). A similar study done by (Deepti et al, 2022) using *Rasnadi Panchaka Kwatha* for a different disease that has similar subjective parameters as *Sandhi shoola, Sandhi shotha*, and *Sandhi sthabdatha* found similar results which are statistically highly significant ($p <0.001$). Another similar study done by (Nikel et al, 2019) using *Rasnadi Panchaka Kwatha* for a different disease which has similar subjective parameters as *Sandhi shoola, Sandhi shotha*, and *Sandhi sthabdatha* found similar results which are statistically highly significant ($p <0.001$) (4). Another similar study done by (Roktima *et al,* 2019) using *Rasnadi Panchaka Kwatha* for a different disease which has similar subjective parameters as *Sandhi shoola, Sandhi shotha*, and *Sandhi sthabdatha* found similar results which are statistically highly significant ($p <0.001$). In this study, it has been observed that improvement of the mean value of the ESR from, Hb count and Rh were statistically highly significant ($P< 0.001$).

It has shown that the improvement of the mean value of the *Sandi Shoola, Sandi Shotha,,Sandi Sthabdatha, Angamarda, Aruchi, Alasya, Jvara, Apaka,*

Bahumutratha and *Nidra Viparya* were statistically highly significant ($p< 0.001$) except *Thrushna* and *Bahumuthatha* which is statistically significant. ($p>0.05$) in subjective parameters of *Amavata*. It has also shown that improvement of the mean value of the ESR, Hb count, Rh factor, CRP value was statistically highly significant ($P< 0.001$). A similar study done by (Narendra et al, 2023) found similar results to this study which are ESR, CRP value and Hb counts were statistically highly significant.

When comparing the effect of Group A with Group B, it was observed that *Sandi shoola, Sandi shotha, Sandi sthabdata, Aruchi, Thrushna,* and *Jawara*, were statistically highly significant ($p>0.001$) except *Angamarda, Alasya, Apaka, Bahumutratatha*, and *Nidra Viparya* which is statistically significant with the $p <0.05$. Also, it has given good relief in most of the subjective parameters as *Sandhi shoola, Sandi shotha, Sandhi sthabdatha, Aruchi, Jwara*, and *Nidra bramsa* in Group B except *Angamardha*, *Thrushna , Alasya,* and *Apaka*. When comparing the overall improvement of both Group A and B it has been observed that the majority of the subjective parameters have good improvement following the intervention of *Rasnadi Sapthaka Kwata* along with *Murungadi lepa*. By using both interventions in the *Amavata* treatment protocol it can get the best relief from the disease.

Conclusion

It can be concluded based on the results of this study considering the significant levels of the subjective parameters and Hematological parameters of the intervention done by using *Rasna Panchaka Kawata* along with *Murungadi lepa* and the *Rasna Sapthka Kwwata* along with *Murungadi lepa,* was proved that the *Rasna Sapthaka Kwata* along with *Murungadi lepa* have more effectiveness than the *Rasna Panchaka Kawata* along with *Murungadi lepa* presenting $p<0.001$ value in all subjective parameters as well as in hematological parameters. Also, it has revealed that these both interventions can apply in the relief of *Amavata* condition. For the more accuracy need to repeat this intervention within a large population in more areas.

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