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Research Article

CLINICAL STUDY OF *GODHUMA YUSHA* (*TRITICUM AESTIVUM* LINN.) IN *AMLAPITTA* (GASTRITIS)

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ABSTRACT

Gastritis is a condition that results from inflammation of the gastric mucosal layer characterized by swelling, pain and mucosal membrane irritation of the stomach. Gastritis in Ayurveda can be compared to *Amlapitta* and consumption of *Godhuma* in Ayurvedic classics is shown to be very effective. **Objectives:** To evaluate the study on *Godhuma yusha* in *Amlapitta* (gastritis) and assess its effects on *Amlapitta* (gastritis) **Study Design:** This was a randomized controlled study with 30 patients divided into two groups. Group A and Group B. **Intervention:** Group A included 15 patients and was administered 15ml of *Godhuma yusha* twice daily for a period of 3months. Group B also had 15 patients and was administered placebo 5gm twice daily. All the patients were followed at an interval of 15 days up to 3 months. **Results:** All the parameters such as *Amlodgara, Hritkantadaha, Gourava, Utklesha, Avipaka* and *Agnimandya* showed significant results in both the groups; Group A and Group B after the treatment compared to before treatment with $p<0.0001$ with more significant results in Group A compared to Group B with statistically significant results ($p<0.001$). **Conclusion:** *Godhuma Yusha* consumption was more effective compared to placebo in the management of *Amlapitta*.

INTRODUCTION

In both developing and developed countries, gastritis still continues to be both public and social health problem. [1-3] Developing countries has a global prevalence of 50.8% of populations suffering from gastritis.[4,5] In developed countries, 34.7% of the population health was affected due to gastritis.[5] Gastritis is a condition that results from inflammation of the gastric mucosal layer[1,6,7] characterized by swelling, pain and mucosal membrane irritation of the stomach.[6] It presents with nausea, vomiting, discomfort in the upper abdomen, dull pain, feeling of fullness associated with loss of appetite. [6-8] It occurs either as an acute or chronic depending based on the symptoms.[6,9,10]

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Acute gastritis is the one that lasts for a short period within one or two days and even a month and is defined as an inflammation of the stomach lining that occurs suddenly. [7,9,11]

Whereas chronic gastritis is the one that persists for more than a month and even for years and is defined as the inflammation of the mucosal layer of stomach.[12,13] In clinical practice, this condition is managed with anti-acids, including proton pump inhibitors (PPIs), prostaglandin E1 derivative, misoprostol, NSAID's etc. drugs. Among the most conventional drugs employed in the conservative management of the condition, PPIs such as omeprazole (OPZ) and its derivates are the most common and also these are known to produce undesirable drug interactions and adverse effects. [14]

According to Ayurveda, *Amlapitta* is a very common psychosomatic disease that affects both body and mind and can be correlated with diseases like hyperacidity, gastritis, non-ulcer dyspepsia or AERD etc. *Agni* or the digestive power is given more

importance in Ayurveda and said to be cause of both health and diseases and hence maintenance of the *Agni* is very vital for the positive health and derangement of *Agni* leads to the impairment of digestion and metabolism in the body causing many diseases including autoimmune disorders. *Amlapitta* is one among them caused by the impairment of *Agni*. As per Ayurvedic pathology, when the *Pitta dosha* attains *Amla gunatva* or the sour properties in excess, the disease *Amlapitta* is produced. The disease condition, *Amlapitta* is explained since the *Samhita* period and consumption of *Viruddha Aahara, Kulattha, Lavana rasa* etc are said to be as the causative factors. [15]

It is a *Pitta Pradhana Vyadhi* characterized by *Amlodgara* (sour belching), *Hritkantha Daha* (irritation or burning sensation of heart and throat), *Hritshula* (discomfort in the chest), *Gaurava* (heaviness of the abdomen), *Aruchi* (tastelessness), *Avipaka* (indigestion), *Klama* (fatigue), *Utklesha* (nausea),[16] *Antra Kujana* (gurgling sounds in intestines) and *Vidbheda* (loose stools).[17] Excessive indulgence in improper lifestyle habits leads to *Vata Pitta Dosha* vitiation. Further, *Pitta* along with either *Vata* or *Kapha dosha* slackens the *Jatharagni* and leads to *Jatharagnimandya* (disturbance of digestion). Consumption of food during this period is called as *Vidagdha* or the undigested food. After sometime this gets converted into *Shukta* (acidified) and persists in the stomach for long period. At this stage, *Vidagdhajirna* (the indigestion caused due to acidified chyle) presents as the premonitory symptom of *Amlapitta*. Continued further, this vitiated *Pitta* gets mixed with *Shukta* and causes *Pitta Amavisha Sammurchhana* (amalgamation of un metabolized *Rasa* and undigested food with *Rasa*). This condition is called as *Amlapitta*. [18] In Ayurveda, there is a vast literature on *Amlapitta* and its management and is treated effectively. In *Bhavaprakasha Samhitha*, there is a reference quoting the effectiveness of *Godhuma yusha* in *Amlapitta*. Hence in this study, an attempt was made to evaluate the same through a clinical study.

METHODOLOGY

Selection of Patients

Present study consists of 38 cases of *Amlapitta* selected from the O.P.D. of Department of Dravyaguna of T.T.D's S.V. Ayurvedic Hospital, Tirupati. Out of these, 8 cases did not turn up for follow up, thus the present study population include only 30 patients. Some of these cases were already known case of gastritis, on the basis of blood test, urine test, back pain. The patient lifestyle history regarding food habit sleep, exercise, evidence and symptomatic presentation. All the cases were registered as O.P.D. cases.

Study Design

This was a randomized controlled study with 30 patients divided into two groups; Group A and Group B consisting 15 patients each. Patients were followed up and assessed done once in 15 days for 3 months.

Inclusion Criteria

- *Avipaka* (indigestion)
- *Udgara* (belching)
- *Amlodgara* (acid eructation)
- *Ama* (abdominal fullness)
- *Hrit daha* (heart burn)
- *Kanta daha* (burning sensation in throat)
- *Chardi* (nausea/vomiting)
- *Ajirna* (constipation/diarrhea)
- No sex discrimination
- Negative endoscopy findings

Exclusion Criteria

- Age below 15 years and above 50 years
- Duodenal ulcers
- IBS gastritis
- Metabolic disorders
- Hepato-biliary pancreatic disease
- Pregnancy
- Patients who are underwent surgery for GIT lesions
- Patients who are not willing to participate in the study
- Patients who are taking anti motility drugs

Intervention

Group A was administered 15ml of *Godhuma yusha* twice daily for a period of 3 months. Group B was administered placebo 5gm twice daily. All the patients were followed at an interval of 15 days upto 3 months. All the patients during the treatment were directed to follow the dietary restrictions and to perform mild exercise.

Collection of Drugs

The plant material, wheat grains collected from the local farmers of Kamalapuram, Hampi, and were authentified by Department of Dravya Guna, S.V. Ayurvedic Medical College. They were shade dried and made into granules (or) powdered coarsely. Fresh *Godhuma* seeds were collected from the village Kamalapuram weight of about 20kg.

Selection of seeds

For the best selection of seeds, the dry seeds were first dropped in a beaker containing water. The seeds which float on the surface of water or found broken, were rejected and the seeds which were found settled at the bottom of the beaker were selected after drying in air. After that the shade dried seeds were pulverized and were subjected for sieving to obtain coarse powder in Srinivasa Ayurveda Pharmacy, Mangapuram.

Preparation of *Godhuma Bija Curna*

***Churna* preparation**

10kg of cleaned, sieved and purified wheat seeds (*Triticum aestivum* Linn.) were collected and washed with water and made a shade dry. This drug was individually pulverized and was subjected for sieving to obtain fine powders.

Preparation of *Yusha (Kaiyadeva Nighantu)*

The prepared *Yava Kuta Godhuma* was taken in a clean stainless steel vessel of about 5gm and about 18 parts of water. The vessel is placed over mild fire and cooked until all the grains are fairly cooked and a thin gruel is obtained, later when cool on its own, this is advised as *Yusha*. This *Yusha* is used for both therapeutic and dietetic purpose.

Diagnostic Criteria

All the patients were examined clinically for signs and symptoms of *Amlapitta* like indigestion, belching, acid eructation, abdominal fullness, heart burn, burning sensation in throat, nausea, constipation etc. However new diagnostic criteria given by WHO was adopted as anchoring diagnostic criteria. Patients were also subjected for following investigation.

Investigations

- Blood pathology
- Blood Biochemistry
- Urine Analysis
- Endoscopy to exclude other pathology.

Assessment Criteria

All the selected patients were advised to come for follow up on every 15th day up to three 3 months.

Parameters

1. *Amlodgara*
2. *Hrt Kanta Daha*
3. *Gourava*
4. *Utklesha*
5. *Avipaka*
6. *Agnimandya*

Grading of Parameters

Table1: Grading of Parameters

S.No	Parameters	Features	Grading
1.	*Amlodgara*	No regurgitation	0
		Feeling of regurgitation	1
		Regurgitation of gastric contents in the mouth.	2
		Frequent regurgitation of gastric contents in the mouth.	3
2.	*Daha*	No burning sensation (no retrosternal discomfort)	0
		Sensation of warmth on throat occasionally (sub spell check)	1
		Burning sensation on throat and chest after a mild oily.	2
		Feeling of burning sensation always irrespective of the diet.	3
3.	*Gourava*	Normal	0
		Feeling of heaviness in morning	1
		Feeling of heaviness in morning and evening after food	2
		Feeling of heaviness always	3
4.	*Utklesha*	No vomiting	0
		Occasional urge to vomiting	1
		Vomiting occurs 1-2 times /day	2
		Vomiting daily	3
5.	*Avipaka*	No digestion	0
		Unable to digest mild fatty food	1
		Unable to digest 3-course meal (tiffin, lunch, dinner).	2
		Unable to digest any kind of food.	3
6.	*Agnimandya*	Normal	0
		Only takes lunch and dinner	1
		Loss of interest in lunch and dinner	2
		No desire to take food.	3

Ethical Committee Clearance

The ethical clearance was obtained by the Institutional Ethical Committee of S.V. Ay. College, Tirupati. (Approval No: A151905004)

OBSERVATIONS AND RESULTS

Table 2: Demographic Data

S.No					
1.	**Age (Years)**	**Group-A**	**Group-B**	**Total**	**Percentage (%)**
	25-40	4	5	9	30
	41-65	9	8	17	56.67
	Above 65	2	2	4	13.34
	Total	15	15	30	100
2.	**Sex**				
	Male	8	7	15	50
	Female	7	8	15	50
	Total	15	15	30	100
3.	**Marital status**				
	Single	1	3	4	13.34
	Married	10	12	22	73.34
	Widow	2	0	2	6.67
	Widower	2	0	2	6.67
	Total	15	15	30	100
4.	**Religion**				
	Hindu	14	11	25	83.34
	Muslim	1	1	2	6.67
	Christian	0	3	3	10
	Total	15	15	30	100
5.	**Occupation**				
	House Wife	4	4	8	26.67
	Labour	4	3	7	23.34
	Business	1	8	9	30
	Employee	6	0	6	20
6.	**Habitat**				
	Urban	6	11	17	56.67
	Rural	9	4	13	43.34
	Total	15	15	30	100
7.	**Socio-economic status**				
	Very poor	7	2	9	30
	Middle	6	3	9	30
	Upper Middle	0	5	5	16.67
	Rich	2	5	7	23.34
	Total	15	15	30	100
8.	Education				
	Illiterate	12	12	24	80

	Literate	3	3	6	20
9.	**Dietary habit**				
	Veg	6	3	9	30
	Mixed	9	12	21	70
	Total	15	15	30	100
10.	**Digestive power**				
	Good	5	5	10	33.34
	Average	8	7	15	50
	Poor	2	3	5	16.67
	Total	15	15	30	100
11.	**Addiction**				
	No addiction	1	0	1	3.34
	Tea	5	9	14	46.67
	Coffee	6	2	8	26.67
	Alcohol	3	4	7	23.34
	Total	15	15	30	100
12	**Bowel Habit**				
	Irregular	7	9	16	53.34
	Regular	8	6	14	46.67
	Total	15	15	30	100
13	**Physical activity**				
	Active	10	6	16	53.34
	Sedentary	5	9	14	46.67
	Total	15	15	30	100
14.	**Total Duration of illness**				
	0-6 Months	5	5	10	30.31
	6-12 Months	4	2	6	18.19
	1-2 Years	2	3	5	15.16
	Above 2 years	4	8	12	36.37
	Total	15	18	33	100
15.	**Family History**				
	Present	8	8	16	53.34
	Absent	7	7	14	46.67
	Total	15	15	30	100
16.	**Onset**				
	Gradual	6	8	14	29.17
	Insidious	4	30	34	70.84
	Total	10	38	48	100

Patients between the age group of 25-75 years were selected for the present clinical study. The data reveals that majority of the patients belonged to the age group of 41-65 years (56.7%) and 25-40 years (30%) and followed by 41-65 years (13.3%). This shows that *Amlapitta* is more common in the age group of 41-65 years.

In the present study, 50% were of females and remaining 50% patients were males. Majority of the patients were married i.e., 73.3% and remaining were

widow and widower i.e., 6.7%. Regarding the religion, majority of cases were Hindu i.e., 83.3%, Christians 10% and remaining patients i.e., 06.7% were Muslims. In this study housewives were more in number i.e., 26.7%, followed by businessmen (30%), labour (23.3%) and employees (20%). Majority of cases belonged to urban area (56.7%) followed by rural area (43.3%). Very poor- Upto 10,000 annually middle – upto 5 lakhs annually, Upper middle - upto 30 lakhs annually, Rich- Above 30 lakhs annually. Maximum i.e., 30 % patients were belonging to middle class, 30% patients belong to very poor followed by 23.3% rich and 16.7% upper middle class. Maximum number of patients i.e., 80% were illiterates and 20% literates. Maximum patients have average digestive power (50%), followed by good (33%) and remaining were poor digestive power (17%). Most of the patients were of tea addiction (47%) followed by coffee 27% alcohol 23% and no addiction 3%. Regarding the bowel habit, maximum patients were irregular (53%) followed by regular (47%). Most of the patients were in active (53%) sedentary group (47%) followed by and sedentary group (47%). Most of the patients were having family history of *Amlapitta* (53%) and 46% showed no family history of *Amlapitta*.

Table 3: Distribution of patient according to Chief complaints After Treatment

Chief complaints	No. of Patients		Total	%
	Group-A	Group-B		
Amlodlgara	7	11	18	60
Hritkantadaha	10	11	21	70
Gouraava	7	9	16	53.33333
Utklesha	7	8	15	50
Aripaka	7	10	17	56.66667
Agnimandhya	9	7	16	53.33333

It was observed that 70% patients were seen with *Hritkantadaha, Amloalgara* 60%, *Avipaka* 56.6%, *Agnimandhya* 53.3% and 50% in *Utklesha.*

Table 4: Within group Results (Group A and Group B)

S.No	Parameters		Group A			Group B		
1.	***Amlodgara***	**Before Treatment**	**Score**	**No.**	**%**	**Score**	**No.**	**%**
			0	0	0	0	4	13.3
			1	1	3.3	1	0	0
			2	6	20	2	5	16.7
			3	8	26.7	3	6	20
		After Treatment		8	26.7		4	13.3
				6	20		8	26.7
				1	3.3		3	10
				0	0		0	0
		Total		30	100		30	100
2.	***Hritkantadaha***	Before Treatment	0	0	0	0	5	16.7
			1	1	3.3	1	4	13.4
			2	7	23.3	2	6	20
			3	7	23.3	3	0	0
		After Treatment		6	20		4	13.3
				9	30		10	33.3
				0	0		1	3.4
				0	0		0	0
		Total		30	100		100	30
3.	***Gourava***	Before Treatment	0	0	0	0	0	0

			1	7	23.3	1	2	6.7
			2	2	6.7	2	9	30
			3	6	20	3	4	13.3
		After Treatment		8	26.7		6	20
				7	23.3		8	26.7
				0	0		1	3.3
				0	0		0	0
		Total		30	100		30	100
4.	***Utklesha***	Before Treatment	0	0	0	0	0	0
			1	2	6.7	1	3	10
			2	7	23.3	2	6	20
			3	6	20	3	6	20
			0	0	0	0	0	0
		After Treatment		8	26.7		7	23.3
				7	23.3		8	26.7
				0	0		0	0
				0	0		0	0
		Total		30	100		30	100
5.	***Avipaka***	Before Treatment	0	1	3.3	0	0	0
			1	4	13.3	1	3	10
			2	4	13.4	2	3	10
			3	6	20	3	9	30
		After Treatment		8	26.7		5	16.7
				7	23.3		10	33.3
				0	0		0	0
				0	0		0	0
		Total		30	100		30	100
6.	***Agnimandhya***	Before Treatment	0	1	3.34	0	4	13.34
			1	3	10	1	3	10
			2	5	16.67	2	2	6.67
			3	6	20	3	6	20
		After Treatment		6	20		8	26.s67
				9	30		6	20
				0	0		1	3.34
				0	0		0	0
		Total		30	100		30	100

Group A

All the parameters such as *Amlodgara, Hritkantadaha, Gourava, Utklesha, Avipaka* and *Agnimandya* showed significant results in Group A after the treatment compared to before treatment with $p<0.0001$.

Group B

All the parameters such as *Amlodgara, Hritkantadaha, Gourava, Utklesha, Avipaka* and *Agnimandya* showed significant results in Group B after the treatment compared to before treatment with $p<0.0001$.

Table 5: Results between the Groups

Parameters	Mean		Mean diff.	S.D.		S.E.		't'	P	Significance
	B.T.	A.T.		B.T.	A.T.	B.T.	A.T.			
Amlodgara	2.1935	0.7419	1.45161	1.01388	0.68155	0.18210	0.12241	6.698	<0.0001	Extremely significant
Hritkantadaha	2.2258	0.7097	1.5163	0.762	0.52874	0.13686	0.09497	10.406	<0.0001	Extremely significant
Gourava	2	0.5484	1.45161	0.81650	0.56796	0.14665	0.10201	9.098	<0.0001	Extremely significant
Utklesa	2.2258	0.4839	1.74194	0.71692	0.508	0.12876	0.09124	18.858	<0.0001	Extremely Significant
Avipaka	2.2258	0.5806	1.64516	0.92050	0.50161	0.16533	0.09009	12.912	<0.0001	Extremely Significant
Agnimandhya	1.871	0.5484	1.32258	1.11779	0.56796	0.20076	0.10201	8.103	<0.0001	Extremely Significant

All the parameters such as *Amlodgara, Hritkantadaha, Gourava, Utklesha, Avipaka* and *Agnimandya* showed significant results in both the groups; Group A and Group B after the treatment compared to before treatment with p<0.0001 with more significant results in Group A compared to Group B with statistically significant results (p<0.001).

DISCUSSION

Godhuma or wheat is the commonly and very often consumed cereals in the households due to its primary source of energy which is carbohydrates. It possesses significant amounts of nutrients like proteins, fiber, minerals, lipids, vitamins, and phytochemicals that contribute to a healthy diet. Wheat and wheat- based foods also provide essential nutrients required for the good health by its constituents such as proteins, vitamins and phytochemicals that vary widely in amount and composition of environment and genotype. Consumption of Wheat plays a very important role in reduction of risk factors such as Type 2 Diabetes, cancer and lifestyle disorders. [19] Diet or *Ahara* is one of the most significant factors for our survival. It serves as one among the *Trayopasthambha* or the three pillars of Ayurveda. Ayurvedic science highlights the importance of *Ahara* and opines that the healthy food should be consumed for obtaining and maintaining positive health and this is known as *Pathya. Pathya Aahara* is known as the ideal *Aahara* or the diet that's needs to be consumed in order to be healthy and *Apathya* is opposite of *Pathya. Pathya* is also called as the dietary regimen or the ultimate medicine or cooked meal. [20] This is followed by our ancients since centuries and that is the reason for their disease-free life. Father of Modern Medicine Hippocrates also opines the same for medicine as '*Let food be thy medicine be thy food*' and as a result, no food can be equivalent to food. There is a vast literature regarding the food and the food groups in which *Kritanna varga* is one of them and consists of group of processed foods. This comprises various food preparations such as *Peya* (thin gruel of rice), *Vilepi* (thick gruel of rice), *Manda* (rice water), *Yavagu* (gruels), *Yusha* (soup of vegetables or pulses), *Shadavah* (confectionery), *Ragah* (sweet sour sauce) etc. [21]

The present study was a randomized controlled study with 30 patients divided into two groups. Group A and Group B. Group A included 15 patients and was administered 15ml of *Godhuma yusha* twice daily for a period of 3 months. Group B also had 15 patients and was administered placebo 5g twice daily. All the patients were followed at an interval of 15 days up to 3 months. It was observed that 70% patients were seen with *Hritkantadaha, Amloalgara* 60%, *Avipaka* 56.6%, *Agnimandhya* 53.3% and 50% in *Utklesha*. All the parameters such as *Amlodgara*, *Hritkantadaha, Gourava, Utklesha, Avipaka* and *Agnimandya* showed significant results in both the groups; Group A and Group B after the treatment compared to before treatment with p<0.0001 with more significant results in Group A compared to Group B with statistically significant results (p<0.001).

When there is vitiation of *Pitta* in the stomach, *Amlatva* is increased and *Vidagdhajirna*, is caused due to vitiation of *Agni* and finally leading to *Amlapitta*. Management of *Amlapitta* and correction of *Agnimandya* is possible with the combination of both medicine and *Pathya*, the therapeutic diet. *Pathya* in addition to treating the disease, also helps in the prevention of recurrence of the disease. It also restores the *Samprapti* or the pathological factors to the normal and helps in effective management of *Amlapitta*. Awareness of *Pathya* and *Apathya* also helps in the prevention of *Amlapitta. Yusha* or the soup of vegetables or pulses is one among the *Kritanna varga* and it is being given the prime importance and

considered as the therapeutic diet in Ayurveda. *Kaiyadeva Nighantu*, a treatise of Ayurveda describes 22 types of *Yushas* under the *Kritanna varga* and includes *Godhuma* one among them[22] which is imbibed with *Vatapittahara* properties and *Sita virya*. In *Bhavaprakasha Samhitha,* there is a direct reference for the indication of *Godhuma yusha* in the management of *Amlapitta* and the same was evaluated in the present study. With these *Vata Pitta hara* properties, *Godhuma* in the present randomized controlled study has shown that the *Godhuma Yusha* is very effective than the placebo in the management of *Amlapitta* after the treatment with statistically significant results.

CONCLUSION

This was a randomized controlled study with 30 patients divided into 2 groups with administration of *Godhuma Yusha* and Placebo in Group A and Group B respectively. All the parameters such as *Amlodgara*, *Hritkantadaha, Gourava, Utklesha, Avipaka and Agnimandya* evaluated showed significant results in Group A compared to Group B with *Godhuma Yusha* as very effective compared to Placebo administration in *Amlapitta*.

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