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A comparative study to evaluate the efficacy of Anacardium orientale and Bismuthum in management of non-ulcer dyspepsia by using gastrointestinal symptom (GIS) score

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Abstract

Non-ulcer dyspepsia (NUD) is a clinical syndrome which includes epigastric discomfort, bloating after meals, early Satiety, fullness, epigastric burning, flatulence, nausea and/ or vomiting. Although non-ulcer dyspepsia is not a life-threatening disease, there are a number of outpatient studies suggesting that it impairs health-related quality of life in patients on all major variables of quality of life, namely mental, social, and physical functioning, whose impact has received little attention. In light of the current situation, which sees an increase in cases of non-ulcer dyspepsia lowering quality of life related to health in patients and the much unexplored side of Anacardium orientale and Bismuthum, this clinical study was aimed to understand the potential of Anacardium orientale and Bismuthum in the management of non-ulcer dyspepsia by using GIS Score. The statistical results reveal that Bismuthum showed more efficacy than Anacardium orientale in the management of non-ulcer dyspepsia and improving the health-related quality of life (HRQOL) of patients.

Keywords: Non - ulcer dyspepsia, HRQOL, Bismuthum, Anacardium orientale

Introduction

The ultimate objective of every medical system is to improve overall health-related quality of life. Individuals are happier and more effective at work when they have a great quality of life. Non-ulcer dyspepsia is one clinical ailment whose impact on quality of life has gotten little attention among the many clinical conditions affecting people's quality of life.

Non-ulcer dyspepsia is a clinical syndrome characterised by symptoms such as epigastric pain, bloating after meals, early satiety, epigastric burning, flatulence, nausea, and/or vomiting for longer than three months in the absence of an underlying organic disease^[1]. It is a common problem wherein patients suffer from impaired digestion and other symptoms suggestive of an ulcer, but no abnormality is established on investigation^[2]. Patients are diagnosed with non-ulcer dyspepsia at least twice as frequently as peptic ulceration^[3].

Numerous researchers underline the clinical implications of non-ulcer dyspepsia and its significant impact on patients' quality of life, despite the fact that it is not a fatal condition and has not been linked to an increase in mortality^[4]. There are a number of out-patient studies suggesting that non - ulcer dyspepsia impairs health-related quality of life in patients and the impact seems to be on all major variables of quality of life, namely mental, social and physical functioning^[5]. Non-ulcer dyspepsia prevalence has been observed to range between 11% - 29.2%^[6]. A multicentric study from India reported that the prevalence of non-ulcer dyspepsia is about 7.6 to 49% of the Indian population^[7].

A thorough short review of published research evidence on homoeopathic management of patients suffering with non-ulcer dyspepsia identified positive leads with Nat Phos 6X, Curcuma longa, Carbo vegetabilis, Lycopodium, Nux vomica and Robinia and acupuncture along with Homoeopathic intervention^[8, 9, 10, 11].

A systematic review of bismuth therapy for non-ulcer dyspepsia was undertaken by allopathic doctors in the United Kingdom, and the results of that review showed a positive trend toward bismuth salts being more beneficial in managing the condition.^[12] Anacardium orientale is a very valuable remedy, but is not, generally appreciated by our school. It ought to be used mostly for treating mental symptoms at a clinical level, for which it shows good results.

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But it also has more favorable indications for gastrointestinal affections, which are ignored most of the time and for which remedies like *Nux vomica* and *carbo vegetabilis* are used indiscriminately. *Materia medica* literature of *Anacardium orientale* and *Bismuthum* showed their indications well in nausea, vomiting, stomach pain, burning, bloating, eructations, slow and weak digestion, acidity, sickness^[13, 14, 15, 16] – the major symptoms of Non – ulcer dyspepsia.

The current therapeutic modalities in the conventional medical system include drugs like analgesics, antacids, etc. that merely provide palliation, and their prolonged use may result in undetected consequences and the emergence of iatrogenic diseases.

Considering the current scenario of an increase in non-ulcer dyspepsia cases impairing health-related quality of life in patients and its impact on all major variables of quality of life, namely mental, social, and physical functioning and the much unexplored side of *Anacardium orientale* and *Bismuthum*, this clinical study was aimed to understand the potential of *Anacardium orientale* and *Bismuthum* in the management of non-ulcer dyspepsia by using GIS Score.

Aims and Objectives

- To assess and compare the efficacy of *Anacardium orientale* and *Bismuthum* in the treatment of non-ulcer dyspepsia clinical syndrome.
- To explore the role of *Anacardium orientale* and *Bismuthum* in improving the quality of life of individuals suffering with non-ulcer dyspepsia.
- Assessment of patient improvement in symptoms and quality of life is done by the Gastrointestinal symptom (GIS) score questionnaire, which is given to patients before treatment and thereafter every one month to analyse the improvement in symptoms and quality of life.

Materials and Methods

Ethical committee clearance was obtained from institutional ethical committee before the start of study. Informed consent form as per WHO guidelines was also obtained from volunteers.

Research design

Comparative experimental study.

Sample design

Sampling procedure: For the study patients were selected randomly based on inclusion and exclusion criteria.

Inclusion criteria:

1. The individuals aged between 18 and 60 years.
2. In the case of women who are not pregnant and not lactating.
3. Patients who are having at least five of the following symptoms
 - Nausea
 - Vomiting
 - Bloating
 - Abdominal Cramps
 - Early satiety
 - Acid eructation/ Heart burn
 - Sickness

- Loss of appetite
- Retrosternal discomfort
- Epigastric or Upper abdominal pain

Exclusion criteria

Patients with a history of gastrointestinal surgery, peptic ulcer, gastroesophageal reflux disease, gastric or esophageal cancer, pancreatic or biliary disorders, intolerance to food or drugs, other infectious or systemic diseases, associated alarming symptoms such as gastrointestinal hemorrhage, under any medication were excluded from the study. Pregnant or lactating females were also excluded from the study.

Source of data

- This study was carried out on 30 subjects attending MNR Homoeopathic medical college and Hospital, Fasalwadi, Sangareddy, Telangana.
- Data was collected from patient's parents/attenders, by interviewing the patient's history in detail and after thorough physical examination.
- A standard case record was maintained for keeping the clinical profile of the patients. This format is prepared according to the homoeopathic method of case taking, keeping in view of individualistic and diagnostic aspects.

Assessment tool

Gastro intestinal symptom Score (GIS) questionnaire was given to the patients before treatment and thereafter every one month to assess the improvement in symptoms and quality of life.

Selection of remedy: 15 patients were treated with *Anacardium orientale* and 15 patients with *Bismuthum*.

Selection of potency and dose: Selected according to the susceptibility level of individual.

Follow up: Cases were reviewed once in 15-30 days and followed for the period of 6 months.

Management: Appropriate general management techniques regarding diet and regimen, modification of lifestyle, were advised depending upon a case.

Hypothesis

Null hypothesis (H₀)

There is no difference in the intensity of symptoms before and after treatment with homoeopathic interventions.

Research hypothesis (H₁)

Anacardium orientale and *Bismuthum* is effective in treating the non-ulcer dyspepsia along with improvement in quality of life and there is remarkable raise in the improvement scores before and after treatment.

Observation and Results

This section contains the description of data collected from 30 cases. The data collected from these patients subjected to the statistical analysis. The observations made and results of this analysis are presented in the form of tables, diagrams and charts.

Table 1: Distribution of cases based on Age group

Age	Number of cases	Percentage
20 - 30	5	16.6%
31 - 40	9	30%
41 - 50	14	46.6%
51 - 60	2	6.6%
Total	30	100%

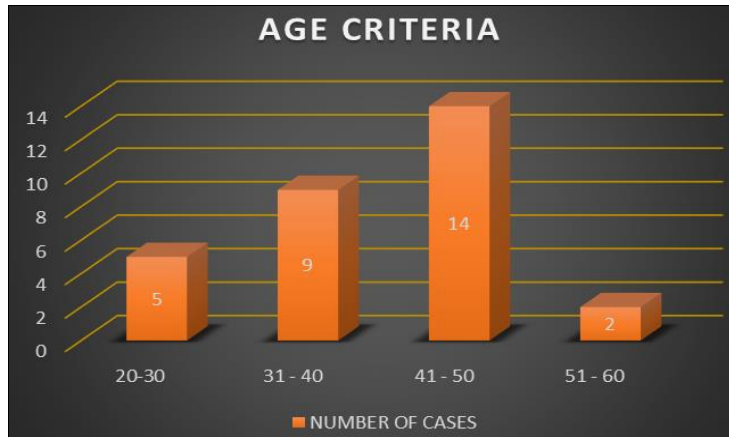


Fig 1: Distribution of cases based on Age group

Table 2: Distribution of cases according to gender

Gender	Number of cases	Percentage
Male	19	64%
Female	11	36%
Total	30	100%

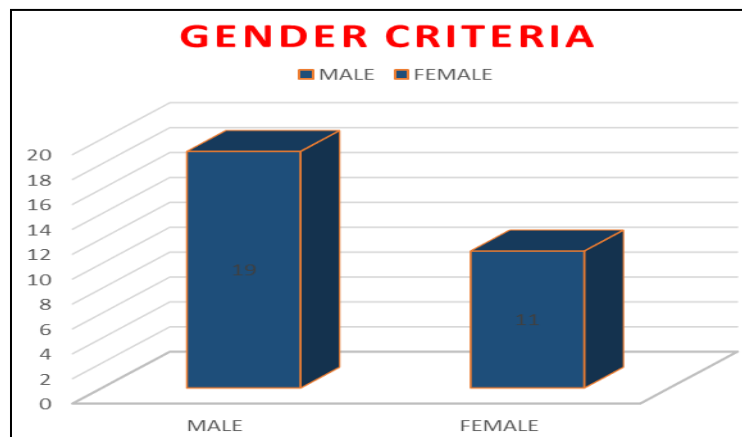


Fig 2: Distribution of cases according to gender

Table 3: Distribution of cases according to Life style

Life style	Number of cases	Percentage
Sedentary	18	60%
Active	12	40%
Total	30	100%

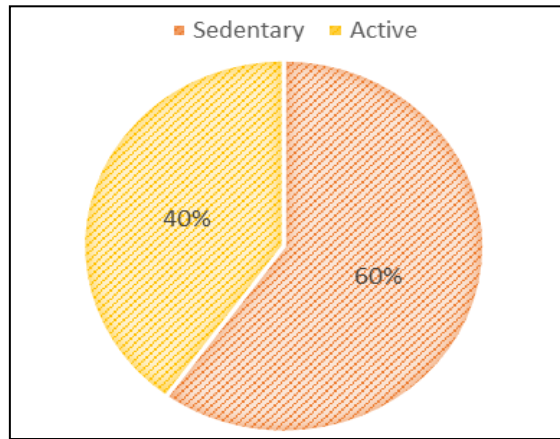


Fig 3: Distribution of cases according to Life style

Table 4: Distribution of cases according to Dietary factors

Dietary factors	Number of cases	Percentage
Regular diet intake	7	23.3%
Irregular diet intake	23	76.6%
Total	30	100%

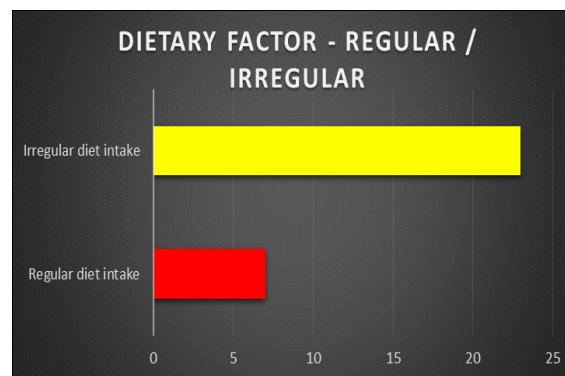


Fig 4: Distribution of cases according to Dietary factors

Table 5: Distribution of cases according to psychological associations

Psychological associations	Number of cases	Percentage
Patients with Psychological Symptoms	20	66.6%
Patients without Psychological Symptoms	10	33.3%
Total	30	100%

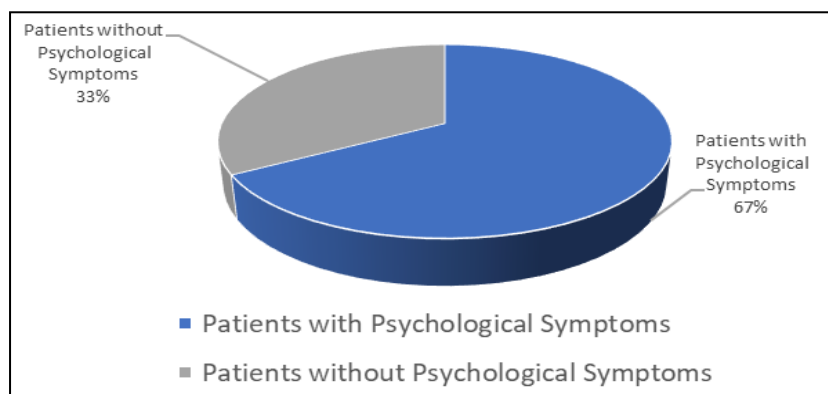


Fig 5: Distribution of cases according to psychological associations

Table 6: Distribution of cases according to Helicobacter pylori infection

H. bacter pylori	Number of cases	Percentage
Diagnosed positive	0	0%
Diagnosed negative	30	100%
Total	30	100%

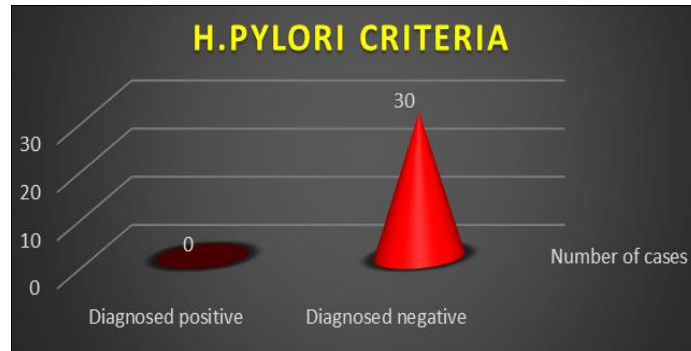


Fig 6: Distribution of cases according to Helicobacter pylori infection

Table 7: Distribution of cases according to Socio-economic status

Socio- economic status	Number of cases	Percentage
Upper class	2	6.6%
Middle class	24	80%
Lower class	4	13.3%

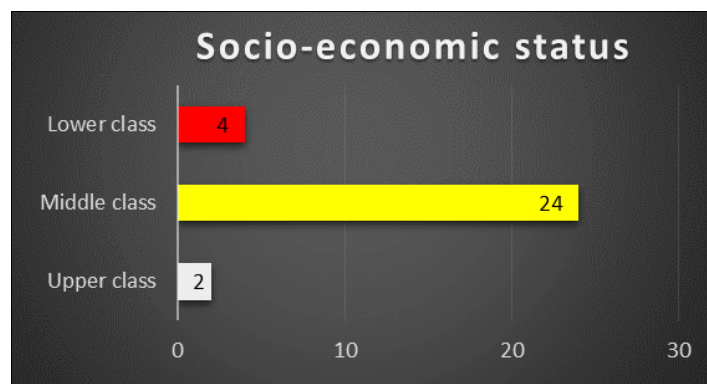


Fig 7: Distribution of cases according to Socio-economic status

Table 8: Distribution of cases according to improvement –Anacardium Group

Anacardium orientale	Number of cases	Percentage
Marked Improvement	10	66.6%
No improvement	5	33.3%
Total	15	100%

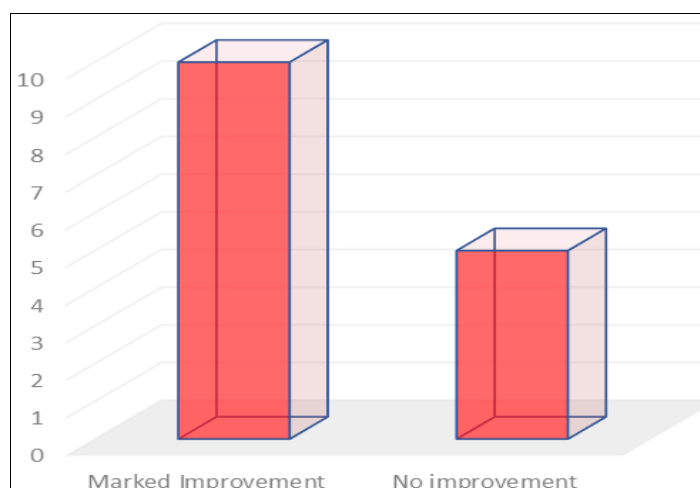


Fig 8: Distribution of cases according to improvement- Anacardium Group

Table 9: Distribution of cases according to improvement –Bismuth Group

Bismuth group	Number of cases	Percentage
Marked Improvement	11	73.3%
No Improvement	4	26.6%
Total	15	100%

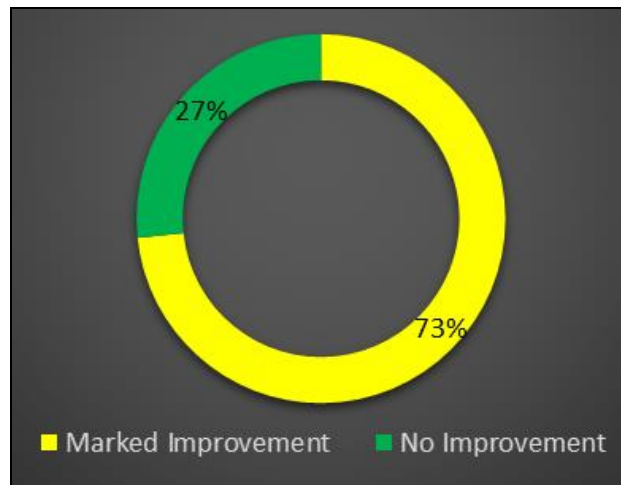


Fig 9: Distribution of cases according to improvement –Bismuth Group

Analysis of Data

- To achieve the above objective of the study, the GIS scores of 10 questions before and after treatment of each patient are summed up separately for both interventional groups, i.e., Anacardium Orientale and Bismuthum.
- Sum of the GIS scores of Anacardium Orientale group after treatment is subtracted from the Sum of the GIS

- scores of Anacardium Orientale group before treatment.
- Sum of the GIS scores of Bismuthum group after treatment is subtracted from the Sum of the GIS scores of Bismuthum group before treatment.
- An unpaired t-test is used to compare the difference values obtained in the Anacardium orientale and Bismuthum groups.

S. No	Sum of GIS Scores of ANACARDIUM ORIENTALE				Sum of GIS score of BISMUTHUM GROUP			
	OPD NUMBER	Before	After	difference	OPD NUMBER	before	after	difference
1	G/22/1922	37	21	16	G/22/1952	36	13	23
2	G/22/1939	34	17	17	G/22/1978	34	10	24
3	G/22/1946	32	17	15	G/22/1988	33	11	22
4	G/22/1949	32	28	04	G/22/2090	30	11	19
5	G/22/1962	29	16	13	G/22/2568	31	11	20
6	G/22/1999	25	23	02	G/22/2575	34	14	20
7	G/22/2460	30	17	13	G/22/2599	18	15	03
8	G/22/2560	29	18	11	G/22/2645	35	14	21
9	G/22/2596	26	15	11	G/22/2580	35	13	22
10	G/22/2647	29	26	02	G/22/2719	27	24	03
11	G/22/2670	28	15	13	G/22/2724	28	25	03
12	G/22/2679	29	14	15	G/22/2810	27	24	03
13	G/22/2706	26	23	03	G/22/2819	32	13	19
14	G/22/2712	35	22	13	G/22/2836	34	12	22
15	G/22/2724	25	23	02	G/22/2899	32	11	21

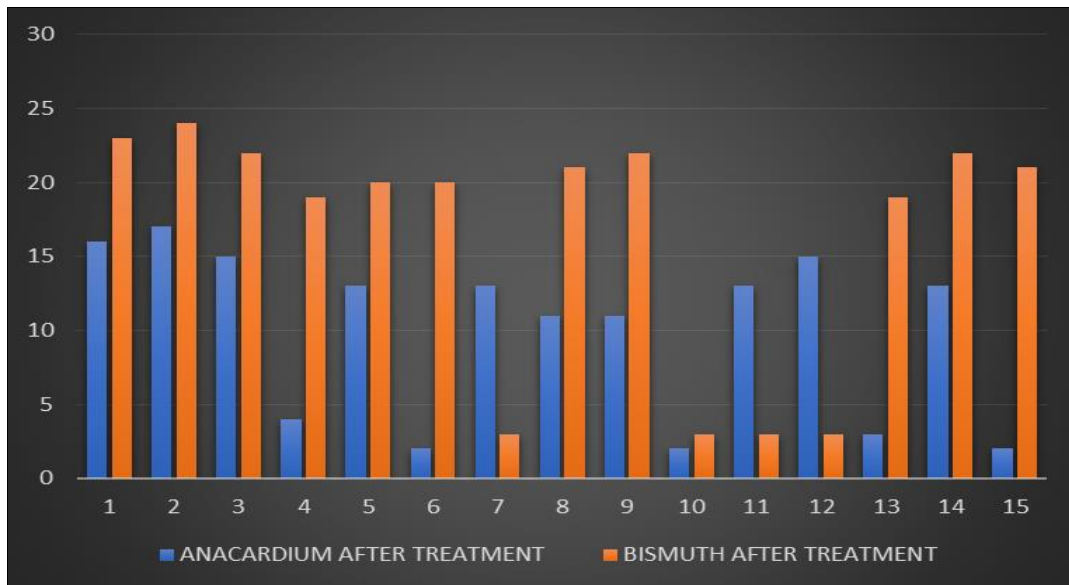


Fig 10: Comparative Chart of Efficacy of Anacardium and Bismuthum after Treatment

Unpaired t -Test Results

P value and statistical significance:

- The two-tailed P value equals 0.0353

By conventional criteria, this difference is considered to be statistically significant.

- Confidence interval:

The mean of Group One minus Group Two equals -5.67
95% confidence interval of this difference: From -10.92 to -0.42

- Intermediate values used in calculations:

t = 2.2116

df = 28

Standard error of difference = 2.562

- Review of data:

Group	Anacardium orientale	Bismuthum
Mean	10.67	16.33
Sd	5.23	8.43
Sem	1.35	2.18
N	15	15

- Based on p value, mean and standard difference of Anacardium orientale and Bismuthum: Anacardium orientale (10.00±5.23) and bismuth (16.07±8.43).
- The above unpaired t-test results reveal that Bismuthum showed more efficacy than Anacardium orientale in the management of non-ulcer dyspepsia and improving the health-related quality of life (HRQOL) of patients.

Conclusion

- Most effected age group is 41- 50.
- Males are affected more than females.
- Sedentary lifestyles have a marked effect on developing non-ulcer dyspepsia.
- Irregular diet habits are a predisposing factor for developing non-ulcer dyspepsia.
- H. Pylori infection association with non -ulcer dyspepsia is not established.
- Individuals suffering from non-ulcer dyspepsia had a high impact on health-related quality of life, indicating that psychological associations with non-ulcer

dyspepsia are well established.

- Patients of middle-class socioeconomic status were affected more.
- When comparing efficacy in the treatment of non-ulcer dyspepsia, bismuth outperformed Anacardium orientale in terms of improving health-related quality of life.

Summary

This work is intended to study the clinical presentation of non-ulcer dyspepsia and to evaluate and compare the clinical utility of Anacardium orientale and Bismuthum in its treatment and in improving health-related quality of life. After understanding their essence, 30 cases that fall under the inclusion criteria of the study were considered. Out of 30 patients, 15 were treated with Anacardium orientale and the other 15 with Bismuthum. The treatment of non-ulcer dyspepsia by Anacardium orientale and Bismuthum has been confirmed with the statistical analysis; it shows that the result is statistically significant. Homeopathic medicine(s) were found to be very effective in treating non-ulcer dyspepsia and improving the health-related quality of life of diseased individuals in this small study group, indicating their efficacy in the general population.

Conflict of Interest

Not available

Financial Support

Not available

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