WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 12, Issue 3, 775-784. Research Article ISSN 2277– 7105

AN OPEN LABELED, SINGLE ARM, CLINICAL STUDY TO EVALUATE EFFICACY AND SAFETY OF GRACE HING (HING OIL 15 MG) HPMC CAPSULES IN THE TREATMENT OF ABDOMINAL PAIN AND FUNCTIONAL DYSPEPSIA

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Article Received on
13 Dec. 2022,

Revised on 02 Jan. 2023,
Accepted on 23 Jan. 2023

DOI: 10.20959/wjpr20233-27053

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ABSTRACT

Background and Aim: Abdominal pain should be major complaint and reason for consultation in medical aid. It affects nearly every person once in their lifetime regardless of age, gender and social background. Abdominal pain can be caused by a broad spectrum of diseases from incidental and self-limited (e.g. gastroenteritis) to acute and serious conditions (e.g. abdominal aortic aneurysm). Management of this problem has continuously been a challenge due to the adverse event and the cost related to the chemical drugs. Man since time immemorial has been using herbs or plant products as medicine for developing immunity or resistance against cold, coryza, joint pains, and fever. The aim of this study is to demonstrate the safety and efficacy of hing oil for abdominal pain and functional dyspepsia patients. **Material and Method:** The present open labeled, single arm, study on 15 subjects characterized with functional dyspepsia and associated abdominal pain demonstrated the safety and efficacy of hing oil**.** The primary end point was a decrease in VAS for pain intensity. While the secondary end points include efficacy assessment of Nepean Dyspepsia Index (NDI), Gastrointestinal Symptom Rating Scale (GSRS), Global overall symptom scale(GOS), and adverse events. **Result and**

Conclusion: These finding indicate that GRACE HING (Hing oil 15 mg) HPMC Capsules improved patients' standard of living with high interest and focus on their daily routines after taking the capsules because of an advance improvement in bloating, postprandial fullness, food intake, heart burn, constipation, and digestion with no side effects or adverse events.

KEYWORDS: GOS, GSRS, Hing Oil, Medicinal Plant, NDI, Treatment.

1. INTRODUCTION

Digestive symptoms are persistent in the general community, ranging between 10 and 30 per cent in developed countries, in spite of the fact that with high variability in degrees of severity. In the majority of cases, traditional indicative procedures fail to diagnose any organic, systemic or metabolic cause that is liable for digestive function syndromes and symptom perception; so that these conditions are categorized as functional gastrointestinal disorders.[5] Among this functional dyspepsia and abdominal pain are the most common one.

Abdominal pain is discomfort that is felt in the part of the trunk in between ribs and pelvis which comes from organs within the abdomen or organs adjacent to the belly.[1] Abdominal pain can be caused by a broad spectrum of diseases from primarily trivial and self-limited (e.g. gastroenteritis) to acute and life-threatening conditions (e.g. abdominal aortic aneurysm).[2]

Functional dyspepsia (FD) is one of the most common functional gastrointestinal disorders (FGIDs) that have been shown to affect the gastro duodenal region of the gastrointestinal (GI) tract with no identifiable structural lesions. FD is normally characterized with discomforts such as bloating, early satiety, postprandial fullness, belching, heart burn, indigestion, and epigastric pain leading to the poor quality of life.[3]

Medicinal plants are contemplated an invaluable and a consistent source of bioactive chemical compounds. Among all other medicinal plants, spices are a major element of Ayurveda. Instead of being an irreplaceable culinary, they have their history in the field of herbal medicine due to the fact they possess wide range of phytochemicals. These phytochemicals have been used to cure several illnesses, and they can be auspicious alternative to conventional medical therapies.[4]

Ferula asafoetida is an extensively researched plant, native to Afghanistan and Iran. Among numerous chemical constituents, essential oils and sulphuric compounds are the most

important ones with reported health advantages. Transude from the plant surface is removed which is having sturdy sulphuric smell. Its known benefits are reported for whooping cough, asthma, ulcer, epilepsy, dyspepsia, flatulence, bronchitis, intestinal parasites and influenza.[2] the modus operandi of its administration range from oral ingestion in the traditional Indian cuisine as a crude spice, through skin to even concentrated or ethanolic extract forms. Among numerous benefits, there is well established literature to validate its antioxidant, antibacterial, antifungal, antiprotozoal and antiviral effects especially against Influenza. There are various mechanistic pathways through which asafetida can interact with different molecular targets, thus providing beneficial effects in combating various diseases.[7]

The diagnostic Rome IV bench mark for FD should be fulfilled at least for 2 months before diagnosis, need to be met at least 4 times per month, and include all of the following: recurrent abdominal pain that does not occur merely during physiological activities like: eating and menses; insufficient criteria for other functional gastrointestinal disorders including IBS, FD, or abdominal migraine; and after appropriate evaluation, the abdominal pain is inexplicable by another ailments.[9]

This study deals with the efficacy and safety of GRACE HING CAPSULES for abdominal pain and functional dyspepsia which is supported with statistical analysis. Each GRACE HING asafoetida capsules contains 15mg of Hing oil and other ingredients are Frankincense oil, Coconut oil, Vitamin E. And banding solutions are HPMC, IPA, Chocolate Brown Color and Water. Daily Intake is 2 Capsules or as directed by the healthcare practitioner.

1.1. STUDY OBJECTIVES

The main target of this study is a decrease in VAS for pain intensity and to check the safety and efficacy of Grace Hing capsule for abdominal and functional dyspenia patient by analyzing the Nepean Dyspepsia Index (NDI), Gastrointestinal Symptom Rating Scale (GSRS), Global overall symptom scale and evaluating related Adverse events (AEs) and serious adverse events (SAEs) occurring at any time during the study Duration of study.

2. MATERIALS AND METHOD

This is an Open Labeled Single Arm Clinical Study to evaluate the Efficacy of GRACE HING (Hing oil 15 mg) HPMC Capsules in Abdominal pain with Cramping Subjects. A total of 15 subjects aged between 18-60 years with abdominal pain with Cramping participated in this study. Subjects having abdominal pain with Cramping is allocated and provided to receive GRACE HING (Hing oil 15 mg) HPMC Capsules for 30 days. The primary outcome was pain intensity reduction measured by a Visual Analog Scale (VAS). All subjects were assessed and treated for abdominal pain. The procedures were fully explained to the participants they were asked to sign the consent form. All assessments were performed at baseline, during the treatment course and the follow-up course. Any adverse events were recorded throughout the study.The study was performed following the current version of the declaration of Helsinki (Brazil, 2013) and in compliance with the current ICMR Guidelines for Biomedical Research on Human Patients, Schedule Y (amended version 2015) of Drug and Cosmetics Act, ICH GCP Guidelines, and other applicable regulatory guidelines.The study protocol and the patient information sheet(s) were reviewed and approved by the appropriate Independent Ethics Committee Pharexcel Consulting Private Limited 11, 10th Cross, AYR lay out, Shettyhalli, Jalahalli West, Bangalore -560015.Written informed consent was obtained from subject(s) before the start of the trial and after the approval from IEC. Ethics Committee notifications as per the GCP guidelines issued by the Central Drugs Standard Control Organization (CDSCO) and ethical guidelines for biomedical research on human subjects issued by the Indian Council of Medical Research were followed during the conduct of the study.

2.1. STUDY SETTING AND POPULATION

This study was conducted at Gurudev Clinic, Bazaar Rd, Old Town, Yelahanka, Bangalore – 560064 Karnataka, India from 10 May 2022 to 10 June 2022. A total of 15 subjects aged 18-60 years having abdominal pain with Cramping participated in this study. Subjects: below 18 years and above 60 years old, complaints of abdominal spasms due to other systemic diagnosis apart from Gastro-Intestinal systems such as renal calculi, gall bladder stones, not willing to give informed consent, with co morbidities, who have been diagnosed of chronic diseases, who are associated with long term usage of analgesics & who has past history of Gastro-intestinal surgery were excluded from the study. Demographic characteristics and result of the study were summarized with summary statistics including average and Standard deviation (SD) for continuous variable and frequency and percentages for categorical variable. Any AEs were summarized with a number and the percentage.

2.1.1 Vital signs recorded at the time of screening

The mean values of the vital signs at the time of screening were recorded. The mean temperature of the study participants at the time of screen was 98.27±1.28 ºC, the mean Systolic Blood Pressure at screening visit was 107.40±10.66 mm Hg and Diastolic Blood Pressure 80.47±5.91 mmHg the mean respiratory rate and mean pulse rate at screening visit was 13.87±1.55CPM and 80.93±12.39 bpm respectively.

3. RESULTS AND DISCUSSION

A total of 15 subjects aged 18-60 years were screened and then enrolled for the study after satisfying the inclusion-exclusion criteria.

Laboratory tests values at the screening and at the end of investigation.

Table 1: Mean Data of Lab Investigation.

HEMATOLOGY	SCREENING VISIT	END OF THE VISIT
Haemoglobin	14.93±1.10	15.27±1.03
Leukocytes count total	6595.1±1157.47	7462.47±1847.74
Neutrophil	55.5±8.84	59.13±11.92
Lymphocyte	29.60±5.68	28.67±6.91
Eosinophil	2.87±1.88	3.47±1.68
Monocytes	4.87±1.19	4.80±1.01
RBC Count	4.12±0.29	4.12±0.29
Platelet count	321.87±80.18	253.60±61.66
MCV	87.40±3.94	88.53±3.74
ESR	7.13±5.37	7.67±4.64
BIOCHEMISTRY		
Sodium	143.00±3.91	140.53±2.92
Potassium	4.60±0.51	4.53±0.52
Total Bilirubin	0.53±0.52	0.60±0.51
BUN	10.47±4.66	11.40±4.81
AST SGOT	15.60±8.19	15.27±8.11
ALT SGPT	19.27±9.41	20.93±7.65
Creatinine	0.96±0.09	0.96±0.09

3.1. Primary outcomes

3.1.1 PAIN ASSESSMENTS: MEAN DATA OF VAS SCORE

The Average score of pain intensity in before usage of GRACE HING (Hing oil 15 mg) HPMC Capsules is 5.07±1.49.The Average score of pain intensity after usage of GRACE HING (Hing oil 15 mg) HPMC Capsules in 15th day and 30th day is 3.33±1.11 and 1.00±0.76 respectively. The study on pain assessment of subjects after taking the GRACE HING (Hing

oil 15 mg) HPMC Capsules significantly decreased in 15th day assessment and gradually decreased in 30th day assessment.

3.2. Secondary outcomes

3.2.1. NEPEAN DYSPEPSIA INDEX

ON TENSION				
S. No	**Questions**	**Baseline assessment**	**15th day assessment**	**30th day assessment**
1	Have you experienced any emotional disturbances due to gastric complaints in last 2 weeks	3.47±1.19	1.93±0.88	1.13±0.35
2	Have you been sensitive, tense or frustrated by gastric complaints in last 2 weeks	4.07±0.70	2.13±0.92	1.20±0.41
RESTRICTION ON DAILY ACTIVITIES				
S.NO	**Questions**	**Baseline assessment**	**15th day assessment**	**30th day assessment**
1	Has the ability to engage in pleasurable activities (recreation, sightseeing, hobbies, sports, etc) impaired due to by gastric complaints in last 2 week	3.53±1.13	1.80±0.86	1.27±0.46
2	Is enjoyment in that activity fun (recreation, sightseeing, hobbies, sports, etc) disturbed due to by gastric complaints in last2 week	3.87±1.06	2.07±0.80	1.33±0.49
ON REFRESHMENT RESTRICTION				
S.NO	**Questions**	**Baseline assessment**	**15th day assessment**	**30th day assessment**
1	Has the ability to eat and drink been impaired due to by gastric complaints in last 2 week	3.87±1.25	2.00±0.85	1.40±0.51
2	Has the enjoyment of eating and drinking been disturbed due to by gastric complaints in last2 week	3.87±0.92	2.13±0.92	1.40±0.51
ON KNOWLEDGE/CONTROL RESTRICTION				
S.NO	**Questions**	**Baseline assessment**	**15th day assessment**	**30th day assessment**
1	Do you think that you will always experienced gastric complaints in last 2 week?	3.53±1.06	2.00±0.85	1.40±0.51
2	Do you think that your stomach complaints are caused by every serious illness (cancer or heart) in last 2 weeks?	3.53±0.92	1.67±0.62	1.47±0.52
ON WORK/STUDY RESTRICTION				
S.NO	**Questions**	**Baseline assessment**	**15thday assessment**	**30th day assessment**
1	Has your ability to work or study been disturbed by complaints in last2 week	3.93±0.96	2.40±0.74	1.47±0.52
2	Has your enjoyment of work study	4.20±0.68	1.87±0.92	1.40±0.51

Table 1. Mean Data of Nepean Dyspepsia Index: As shown in table 1 The mean score of subjects experienced (the emotional disturbances, been sensitive, tense or frustrated,

restriction on daily activities**,** restriction on refreshment, restriction on Knowledge/control, restriction on work/study) due to gastric complaints have been significantly decreased after usage of GRACE HING (Hing oil 15 mg) HPMC Capsules.

3.2.2. GASTRO INTESTINAL SYPTOM SCALE

The Gastro Intestinal Symptom Scale Assessment For Pain Or Discomfort In Abdomen, For Heart Burn, Acid Reflux, Nausea, Hunger Pains, Rumbling In The Stomach, Bloated Feeling In The Stomach, Burping In The Stomach, Flatus In The Bowel, Constipation, Diarrhea, Loose Stools, Hard Stools, A Bowel Movement, Sensation Of Not Completely Emptying The Bowels shows a significant change where 100% of subjects were assessed with No discomfort at all after taking the GRACE HING (Hing oil 15 mg) HPMC Capsules at 30th day of visit.

3.2.3. GLOBAL OVERALL SYMPTOM (GOS) SCALE.

S.NO	SYMPTOMS	ASSESSMENTS		
		Baseline assessment	15th day assessment	30th day assessment
1	Epigastric Pain	5.27±1.4	2.93±0.88	1.79±0.70
2	Epigatric Discomfort	4.80±1.6	2.73±0.80	1.71±0.73
3	Heart Burn	4.93±1.3	3.00±0.85	2.14±0.77
4	Acid Reguritation	5.07±1.3	2.87±0.92	1.86±0.77
5	Upper Abdominal Bloating, Excessive Bleching, Nausea, Early Satiety	4.60±1.4	3.27±0.88	1.86±0.77
6	Post Prandial Fullness	4.80±1.6	2.87±0.74	1.86±0.86

Table 2. MEAN DATA OF GOS SCALE: As shown in Table 2 The mean score of global overall symptom scale (gos) of epigastric pain, epigastric gastric discomfort, heart burn, acid reguritation, upper abdominal bloating, excessive bleaching, nausea, early satiety, post prandial fullness significantly declined on 30th day assessment after using the GRACE HING (Hing oil 15 mg) HPMC Capsules.

Eupeptic is a fundamental constitute for standard life and well-being, since the digestive system is responsible for holding nutrients and excretion of the waste.[3]

Abdominal pain is well-known acute and persistent complaint. Medical evaluations typically fail to reveal a pathophysiological clarification for recurrent abdominal pain. Instead, the pain is often functional, closely related with a functional gastrointestinal disorder like IBS or FD, abdominal migraine.[8]

Functional abdominal pain is an abdominal pain that is different from the one characterized by any underlying organic pathology. Subclasses of functional abdominal pain include IBS, FD, and abdominal migraine. Functional abdominal pain is among several groups of gastrointestinal (GI) diseases classified by the Rome IV criteria, in addition to other categories including functional nausea and vomiting or functional defecation disorders.[9]

Medicinal plant drug discovery continues to provide new and important leads against various pharmacological targets.[6] Asafoetida is an oleo-gum-resin obtained from many Ferula species and frequently used in traditional medicine.[10]

The therapeutic effectiveness of essential oils, like other plant-derived remedies, is really underrated. Recent investigation has firmly accepted the traditional beliefs regarding the therapeutic uses of herbal remedies; the spice oil can cover a wide range of activities.[11]

The current study indicated that usage of GRACE HING (Hing oil 15 mg) HPMC Capsules improved the standard of their life with higher interest and focus on their daily routine after taking the capsules with a vital improvement in bloating, postprandial fullness, food intake, heart burn, constipation, and digestion with no side effects or adverse events.

3.2.4. SAFETY EVALUATION

There was no Adverse and Serious Adverse Event recorded during the assessments period.

4. CONCLUSION

Management of functional dyspepsia has always been a challenge due to the side effects According to our investigation it can be concluded that GRACE HING (Hing oil 15 mg) HPMC Capsules improved the standard of patients life with more interest and focus on their daily activities after taking the capsules with a significant improvement in bloating, postprandial fullness, food intake, acid reflux, constipation, and digestion with no related side effects or adverse events.

5. ACKNOWLEDGMENT

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PROTOCOL NO: PHAR/NG//2022/08.

CTRI No: CTRI/2022/05/042652 [Registered on: 19/05/2022] Trial Registered Prospectively.

There is no conflict to disclose.

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