Mini Review

BIOMEDICAL Journal of Scientific & Technical Research

ISSN: 2574 -1241

DOI: 10.26717/BJSTR.2019.23.003938

Peppermint Oil in Conjunction with Caraway Oil: Remedy for Functional Dyspepsia?

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ARTICLE INFO

Received: November 29, 2019

Published: December 06, 2019

Citation: Wasim Jafri, Muhammad Kamran. Peppermint Oil in Conjunction with Caraway Oil: Remedy for Functional Dyspepsia?. Biomed J Sci & Tech Res 23(4)-2019. BJSTR. MS.ID.003938.

ABSTRACT

Functional dyspepsia is a highly prevalent condition in the general population. Many allopathic and herbal therapies have been tried but with limited success. In this mini review, we will discuss the role, with scientific evidence, of peppermint oil (in combination with Caraway oil) in dyspeptic individuals.

Keywords: Functional Dyspepsia; Peppermint Oil; Caraway Oil; Helicobacter Pylori; Hypersensitivity

Introduction

Functional Gastro-Intestinal Disorders (FGIDs) have a huge impact on the general population in terms of high healthcare expenses and repeated physician consultations, both emergency and out-patient [1]. Among these, one of the most prevalent is Functional Dyspepsia (FD), carrying a global prevalence of 10% to 30% and thus vastly affecting the quality of life of the population as a whole [2]. According to the Rome IV criteria, dyspepsia has been defined as any combination of four symptoms: post-prandial fullness, early satiety, epigastric pain, and epigastric burning that are severe enough to interfere with the usual activities and occur at least 3 days per week over the last 3 months with an onset of at least 6 months in advance [3].

Pathophysiology of Functional Dyspepsia

The pathophysiology of FD is complex, key involving factors being visceral hypersensitivity, reduced gastric accommodation and emptying, active Helicobacter pylori (H. pylori) infection, abnormal small intestinal motility and psychological disorders [4]. Accordingly, the treatment armamentarium contains many pharmacological agents, ranging from histamine H2 receptor antagonists (H2 – blockers) and pro-kinetic drugs to anti-depressants [4]. However, it has been our experience that despite being on treatment for longer periods of time, many patients continue to suffer from recurrent symptoms of FD. It has also been observed that many drugs used in this disorder lose their efficacy upon prolonged use. Hence the quest for a novel and effective therapeutic agent for this highly prevalent condition is still ongoing.

Role of Herbal Formulations in Functional Dyspepsia

Traditionally, there has been a lot of interest in phytomedical drugs in the treatment of many FGIDs [5]. These natural herbal remedies usually have a broader pharmacological coverage, are thought have a safer side effect profile and are better tolerated than synthetic formulations. One of such natural products is peppermint. Peppermint (botanical name Mentha x Piperita), both as leaf and as oil extract, has been in use since ancient times for treating disorders of the digestive system [6]. Peppermint oil has been extensively studied in various FGIDs notably irritable bowel syndrome (IBS) and found to have positive results [7]. The proposed mechanism of action seems to be calcium channel blockage in the gastrointestinal (GI) tract, resulting in GI smooth muscle relaxation and visceral pain reduction [8].

However, the therapeutic effects of peppermint oil in FD have been mostly studied in combination with caraway oil (extracted from the fruit of the plant Carum Carvi L), which is also well-known for its spasmolytic and anti-flatulent properties [9]. This

blend of both the agents creates a synergistic effect required to control the variety of symptoms associated with the disorder. The combined formulation utilized in most studies consisted of an enteric-coated capsule containing 90 mg peppermint oil and 50 mg caraway oil, administered for 28 days [10]. In one study, this combination has been found to be efficacious and tolerable without any side effects [11]. Similarly, a positive effect in controlling troublesome symptoms of abdominal pain and discomfort (using validated scales) and hence improving the overall quality of life in such patients has been well demonstrated by several randomized, double-blind, placebo-controlled trials [12,13]. Moreover, similar efficacy was found when the drug combination was compared with the pro-kinetic compound Cisapride, without having troublesome side effects of pro-kinetic agents, for e.g. diarrhea [14].

It should, however, be kept in mind that peppermint oil is not totally devoid of side effects. Consumed in high doses, it can lead to kidney injury [15]. Because peppermint oil can decrease the lower esophageal sphincter pressure and therefore make the reflux symptoms worse, it is relatively contra-indicated in patients with hiatal hernia and symptomatic gastro-esophageal reflux disease (the effect intensifies even further with the combined use of caraway oil) [16]. Similarly, being a choleretic, it can exacerbate pain associated with cholelithiasis and cholecystitis [16]. In addition, peppermint oil should also be used with caution in pregnant ladies as it can initiate menstruation [16].

Conclusion

Peppermint oil in amalgamation with caraway oil seems to be a reasonable alternative for the sufferers of functional dyspepsia. However, studies are lacking regarding the long-term benefits of these agents, given the episodic nature of the condition. Additionally, therapeutic effect of peppermint oil in isolation in such patients is largely unknown and as such further studies are required in this regard.

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ISSN: 2574-1241

DOI: 10.26717/BJSTR.2019.23.003938

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