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Review

ZINPER Soft Gel caps: A Natural Nutrient to Promote Healthy GI peristalsis in cancer patients.

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Abstract

Chemotherapy –induced nausea and vomiting (CINV), also known by the term emesis, is one of the most common and dreaded side effects following cancer treatment, and can strongly impact the quality of day –to-day living of cancer patients. Many Chemotherapeutic agents are associated with significant nausea and vomiting which represent a challenge to effective therapy. The active ingredients present in Zinper softgels are terpenes and oleoresin. The major identified components from terpenes are gingerol and shogaols. Zinper softgels has staring potential as anti-tumor, anti-oxidant, anti inflammatory, anti-microbial, anti-emetic effect, Anti-angiogenesis, anti-nausea and an effective adjuvant treatment for chemotherapy-induced nausea and vomiting. The effectiveness of Zinper softgels in preventing or suppressing cancer growth has been examined in a variety of cancer types, including lymphoma, hepatoma, colorectal cancer, breast cancer, skin cancer, liver cancer, and bladder cancer. This article reviews the current available scientific literature regarding the effect of Zinper softgels as A Natural Nutrient to Promote Healthy GI peristalsis in cancer patients.

Keywords: Zinper Soft Gels, Healthy GI peristalsis

INTRODUCTION

The gastrointestinal (GI) tract is one of the important parts of the body. This tract starts from the mouth, includesesophagus, stomach, small and large intestine, and rectum,andfinally endswith anus.ThehumanGI tract is a single tubewhich is approximately nine meters long in relaxed condition. Disorder in any part of the GI tract results in variousmalfunctions such as diseases of digestive system and cancer.

GI cancer is defined as the cancer of organs of thedigestive system including the esophagus, gallbladder, liver, pancreas, stomach, small intestine, large intestine, rectum, and anus. The common risk factors for GIcancer include infection, smoking, drinking alcohol, high fatdiet, age, race, gender, family history, and geographical location.

GI cancer accounts to 20percent of all newly diagnosed cancer cases. Among different GI cancers, colorectal cancer is the most common cancer and is the second leading cause of death.
Accumulated evidences revealed that changing lifestyle could prevent all these cancers. The major change in lifestyle which proves beneficial includes avoiding tobacco, increased ingestion of fruits and vegetables, moderate use of alcohol, caloric restriction, exercise, minimal meat consumption, in take of whole grains, proper vaccinations, and regular health checkups.

Mechanism of action of Ginger Extract in ZINPER softgels

Ginger Extract in ZINPER softgels has shown to have role in cancer prevention by inactivating and activating various molecular pathways. The mechanism of anticancer activity of Ginger Extract in ZINPERincludes antioxidant activity and the ability to induce apoptosis, decrease proliferation, cause cell-cycle arrest, and suppress activator protein I (AP-1) and NF-κB/COX-2 signaling pathways.[4,5]

Gingerol in ZINPER softgels have reported to cause inhibition and proliferation andinvasion of ascites hepatoma AH109A cells and appeared to act by causing an S-phase arrest, elongated doubling time of hepatoma cells, and an increased rate of apoptosis.[22]Gingerol was reported to inhibit both the vascular endothelial growth factor (VEGF)-and basic fibroblast growth factor (bFGF)-induced proliferation of human endothelial cells and cause cell-cycle arrest in the G1 phase proving its anti-angiogenic activity.[6]Gingerol in ZINPER softgels appeared to be most effective in inducing apoptosis in p53-mutant cells and induced arrest, but not apoptosis, in p53-expressing cells.[7]

Gingerol in ZINPER softgels shows a vital role in the suppression in synthesis of pro-inflammatory cytokines such as IL-1, TNF-α and IL-8.[8] studies have proven to show that elevated levels of TNF-α rats was blocked in liver cancer when treated with ginger extract.[9]

Gingerol in ZINPER has proved its anti-oxidant activity by inhibiting ascorbate /ferrous complex induced lipid peroxidation [10] and reported to show its role in scavenging of superoxide anion, hydroxyl radical and H2O2, which donates electrons, thus neutralizing it to water [11] .

Ginger extract in ZINPERsoftgels possesses antiserotoninergic and 5-HT3 receptor antagonism effects which play an important role in the etiology of postoperative nausea and vomiting [12] .

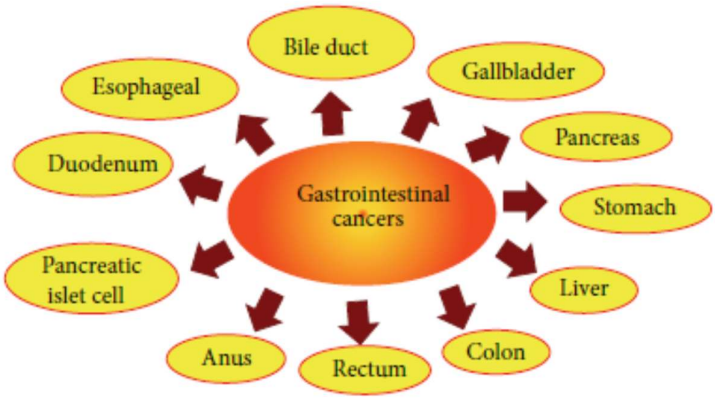

Fig 1: Types of GI Cancer

What is Chemotherapy –Induced Nausea and Vomiting?

Uncontrolled chemotherapy –induced nausea and vomiting (CINV), also known by the term emesis, is one of the most common and dreaded side effects following cancer treatment[3], and can strongly impact the quality of day –to-day living of cancer patients. Many Chemotherapeutic agents are associated with significant nausea and vomiting which represent a challenge to effective therapy.
Prevalence and diagnosis:

- Chemotherapy related emesis has been reported in 70% to 80% of cancer patients, effective management of chemotherapy –induced Nausea and vomiting (CINV) is therefore a critical aspect of overall patient care [2].

Patients receiving chemotherapies such as cisplatin –based therapies and women with breast cancer receiving anthracycline plus cyclophosphamide (AC) are at high- risk of developing CINV. Besides the emetogenicity of the chemotherapeutic agents, other factors such as repeated chemotherapy cycles, and patient risk factors significantly influence CINV[3]

COMPOSITION of ZINPER Soft Gels

GINPER™

Shunthi (Rz.) 500mg capsules
standardized to
super critical CO_2 extracted gingerols 25%

Each capsules contains:	
Shunthi (Rz.)	500 mg
(Ginger extract 40mg contains Ginger Oil 25%)	
Excipients	Q.s

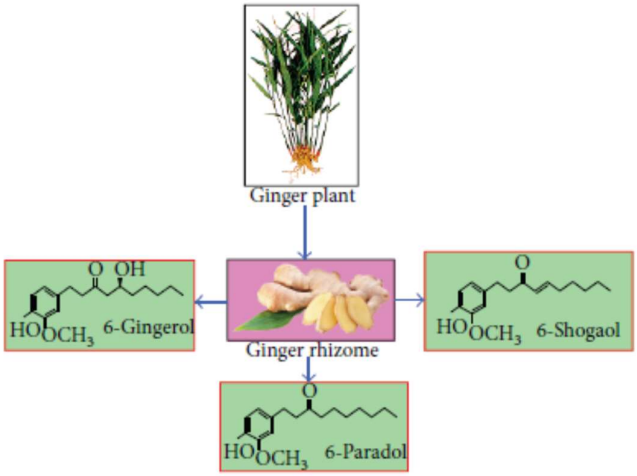

Fig 2: Active constituents of Ginger

Clinical study Reports on Ginger extract in ZINPERsoft gel caps

Ginger in zinper softgels has been recommended to combat nausea associated with chemotherapy. Gingerol in Zinper softgels was reported to reduce cisplatin (a platinum-based chemotherapy drug)-induced emesis in a vomiting model of mink possibly by inhibiting the central or peripheral increase of 5-hydroxytryptamine, dopamine, and substance P[14].

Gingerol in zinper softgels were reported to effectively decrease proliferation of YYT colon cancer cells and the angiogenic potential of endothelial cell tubule formation in immortalized MS1 endothelial cells [16].

Gingerol in zinper softgels was reported to inhibit both proliferation and invasion of ascites hepatoma AH109A cells and appeared to act by causing an S-phase arrest, elongated doubling time of hepatoma cells, and an increased rate of apoptosis [17] .

Ginger in Gingerol induced cell-cycle arrest and suppressed the growth of human pancreatic cancer cell lines, human pancreatic adenocarcinoma (HPAC) cells, which express wild-type p53 and BxPC-3 cells that express a mutant p53 protein [18] .

A double-blind randomized clinical trial was conducted to investigate the effect of ginger on the nausea and vomiting following gynaecological laparoscopic surgery. Both 0.5 and 1.0 g ginger were effective in reducing nausea, with only the higher dose being effective at reducing vomiting [19].

In a double blind study, a group of 80 naval cadets were recruited, each of who was given either 1 gram of powdered ginger or a placebo while at sea. Symptoms of nausea were recorded once an hour during 4 hours following treatment administration. Symptoms in the ginger group were 38% less than in the placebo group [21].

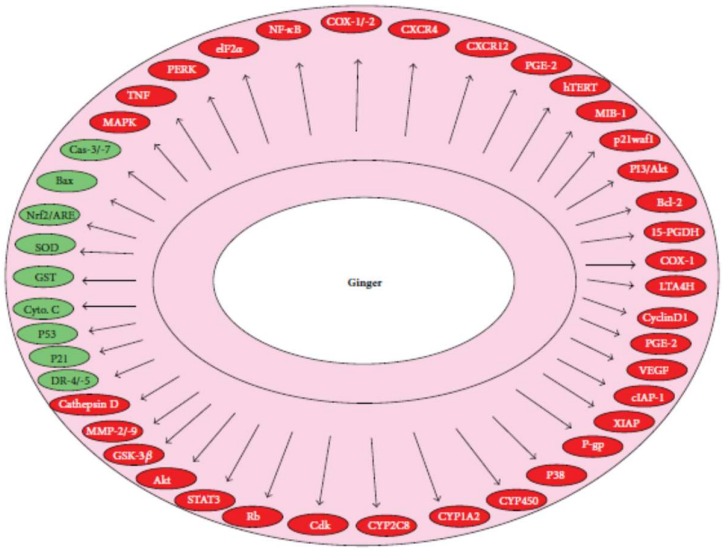

Fig 3: Molecular targets of ginger against GI cancer

Pre Clinical study of Ginger in ZINPER Soft Gel caps

A study investigated the effect of ginger in Zinper on colon carcinogenesis in rats. The rats received weekly injections of a carcinogen for 15 weeks and 50mg/kg of ginger daily by mouth. In the presence of cancer carcinogen plasma lipids were oxidized and cancer incidences were significantly increased, while anti-oxidants were significantly decreased. Ginger extract in ZINPER supplemented rats had a significantly smaller number of tumors and cancer incidence, in addition supplemented rats has significantly less lipid oxidation and higher level of enzymatic and non- enzymatic antioxidants.[13]

The component gingerol in Zinper Soft Gels, was tested for effectiveness in preventing new vessel formation. In cell cultures, gingerol inhibited both the VEGF– and bFGF-induced growth of human skin cells. The ginger component actually stopped the cell from reproducing. In addition, gingerol also blocked capillary-like tube formation by endothelial cells, strongly inhibited sprouting of endothelial cells in the rat aorta, and inhibited the formation of new blood vessels in the mouse cornea.

When mice were injected with gingerol in Zinper, the growth of cancerous melanoma cells was reduced[6]. Cisplatin can cause renal oxidative and nitrosative stress and dysfunction. However, rats that were administered cisplatin and gingerolin zinper exhibited lower lipid peroxidation and conservation of GSH coupled with enhanced superoxide dismutase and catalase, which resulted in a restoration of normal renal function [15].

The carcinogenesis-inhibiting activity of ginger in zinper softgels was studied in a skin tumorigenesis model in mice. Topical application of the extract on the skin of mice subsequently exposed to the tumour inducer TPA (12- *O*-tetradecanoyl-phorbol-13-acetate) resulted in significant inhibition of tumour development and multiplication. TPA-induced tumorige-nesis was significantly inhibited (p<0.0005) by the ginger extract (2 mg/mouse; 56% inhibition). The same dose significantly inhibited TPA-induced cyclooxygenase (p<0.0005) and lipoxy-genase activity (38-72% inhibition) [20].

Recommended Usage of Zinper softgels caps

- One softgel cap perday or As Directed by Healthcare Practitioner.
- Do not exceed the recommended daily dose.

SUMMARY & CONCLUSION

The medicinal properties of ginger in zinper softgels caps have been known for thousands of years, a significant number of *invitro*, *in vivo*, and epidemiological studies further provide substantial evidence that ginger in zinper softgels caps and its active compounds are effective against wide variety of human diseases including GI cancer. Ginger in zinper softgels capshas been found to be effective against various GI cancers such as gastric cancer, pancreatic cancer, liver cancer, colorectal cancer, and cholangiocarcinoma.

Therefore, efficacy of such potent agents on these cancers is warranted. Ginger and its polyphenols in zinper softgels capshave been shown to target multiple signaling molecules that provide a basis for its use againstmultifactorial human diseases including cancer.

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