Gall bladder stone

Introduction:
Gallstones form in the gallbladder, a small organ located under the liver. The gallbladder aids in the digestive process by storing bile and secreting it into the small intestine when food enters. Bile is a fluid produced by the liver and is made up of several substances, including cholesterol, Bilirubin and bile salts.

What Are Gallstones?:
Gallstones are pieces of solid material that form in the gallbladder. These stones develop because cholesterol and pigments in bile sometimes form hard particles.

Causes of Gallstones:
Several factors may come together to create gallstones, including:
- Genetics
- Body weight
- Decreased motility (movement) of the gallbladder
- Diet

Gallstones can form when there is an imbalance in the substances that make up bile. For instance, cholesterol stones may develop as a result of too much cholesterol in the bile. Another cause may be the inability of the gallbladder to empty properly.

Pigment stones are more common in people with certain medical conditions, such as cirrhosis or blood diseases such as sickle cell anemia.

Risk Factors for Gallstones:
Risk factors for getting gallstones include:
- Genetics, If other people in family have had gallstones, you are at increased risk of developing gallstones.
- Obesity, This is one of the biggest risk factors. Obesity can cause a rise in cholesterol and can also keep the gallbladder from emptying completely.
• **Estrogen**, Estrogen can increase cholesterol and reduce gallbladder motility. Women who are pregnant or who take birth control pills or hormone replacement therapy have higher levels of estrogen and may be more likely to develop gallstones.

• **Ethnic background**, Certain ethnic groups, including Native Americans and Mexican-Americans, are more likely to develop gallstones.

• **Gender and age**, Gallstones are more common among women and older people.

• **Cholesterol drugs**, Some cholesterol-lowering drugs increase the amount of cholesterol in bile, which may increase the chances of developing cholesterol stones.

• **Diabetes**, People with diabetes tend to have higher levels of triglycerides (a type of blood fat), which is a risk factor for gallstones.

• **Rapid weight loss**, If a person loses weight too quickly, his or her liver secretes extra cholesterol, which may lead to gallstones. Also, fasting may cause the gallbladder to contract less.

**Symptoms of Gallstones:**

• Pain in the upper abdomen and upper back. The pain may last for several hours.
• Nausea
• Vomiting
• Other gastrointestinal problems, including bloating, indigestion and heartburn, and gas

**Composition:**

Rosemary (Rosmarinus officinalis), Peppermint oil (Mentha piperita), piperine (Piper nigrum)
Major Highlights:

Rosmarinus officinalis (Rosemary):

According to Battaglia, rosemary is an excellent tonic for the liver and gall bladder, and it has traditionally been used for the treatments of biliary colic, gall stones and gall bladder infections.

Research has shown the essential oil to be detoxifying for the liver and it also helps to regulate the creation and release of bile. It also stimulates blood flow and improves circulation, which can benefit the absorption of nutrients from food.

Ref:
Gemmotherapy: a powerful tool for the classical homeopath by Daniel P. Towle, D.C.

In animal study, rosemary normalized the increase in bilirubin level and alanine aminotransferase activity in plasma induced by CCl4.

Ref:

Rosemary contains several antioxidant oil and phenolic components that exhibit hepatoprotective effect. γ-irradiated rosemary following ethanol administration exerts remarkable modulating effect by reducing the level of total bilirubin, the activity of transaminases, gamma glutamyl transferase and serum alkaline phosphatase, decreasing the concentration of some lipid contents, malondialdehyde and xanthine oxidase activity. Supplementation of dietary rosemary resulted in elevation of high density lipoprotein level, reduced glutathione content and enhances the activity of xanthine oxidase dehydrogenase, superoxide dismutase and catalase activity. Irradiated rosemary showed a significant reduction in these enzymes activity and total bilirubin level as compared to ethanol administrated rats. Rosemary for 4 weeks had a significant amelioration in the activity of ALT, AST, ALP and γGT and the concentration of total bilirubin compared to ethanol group.

Ref:

Aruoma et al. exhibited the hepatoprotective properties of rosemary via the retardation of oxidative degradation of lipids. It was also previously proved that rosemarnic and carnosic acids contain mixtures of natural antioxidants inhibited LDL oxidation and have the ability to prevent the deposition of triglycerides in the liver. Moreover, Abd El-Ghany et al. obtained that the inclusion of rosemary powder and rosemary extract to the liver injured rats ameliorated liver enzyme activities compared with CCl4-rats.

Ref:


Inclusion of rosemary powder provided anti-lipoperoxidant activity, as it reduced the formation of malondialdehyde and significantly decreased in xanthine oxidase activity associated with an elevation in glutathione content and the activity of xanthine dehydrogenase, superoxides dismutase and catalase in liver. Bakirel et al. found that long-term treatment of diabetes with the highest dose of the Rosmarinus officinalis extract had reversed the activities of the antioxidant enzymes, which might be due to decreased oxidative stress as evidenced by decreased lipid peroxidation. The Rosmarinus officinalis extract due to presence of several bioactive antioxidant principles and their synergistic properties may be caused an improving effect in antioxidant status.

Ref:

**Mentha piperita (Peppermint oil):**

Peppermint oil is known to be helpful in digestion as it stimulates the flow of bile and other digestive juices. It also contains terpene, the natural compound that is said to dissolve gallstones. Peppermint tea is very useful while you have that gallbladder attack. It helps relax spasms and relieve you from acute pain.

**Ref:**

Peppermint oil is choleretic which means it encourages bile secretion from the liver. It has been used in a formula with other terpenes to help in dissolving gallstones. Peppermint oil is helpful for intestinal pain and cramping and assists with gut motility.

Major Known ingredients in peppermint include menthol, menthone, camphene, limonene, pinene and others. Studies have been done using all of the listed terpenes for the dissolution of gallstones. Separate studies have been conducted using limonene. Studies on a European proprietary choleretic, Rowachol, show that is "occasionally successful in the treatment of gallstones." There is radiological evidence of gallstone dissolution/disappearance in seven of the patients taking the terpene preparation.”

**Ref:**
Bell et al, 1978b.

"In vitro, peppermint has significant antimicrobial and antiviral activities, strong antioxidant and antitumor actions, and some antiallergenic potential. Human studies on the GI, respiratory tract and analgesic effects of peppermint oil and its constituents have been reported. Several clinical trials examining the effects of peppermint oil on irritable bowel syndrome (IBS) symptoms have been conducted.
"The principal pharmacodynamic effect of peppermint oil relevant to the gastrointestinal tract is a dose-related antispasmodic effect on the smooth musculature due to the interference of menthol with the movement of calcium across the cell membrane. The choleretic and antifoaming effects of peppermint oil may play an additional role in medicinal use. Peppermint oil is relatively rapidly absorbed after oral administration and eliminated mainly via the bile.

choleretic - promoting bile secretion by the liver

Ref:

  A review of the bioactivity and potential health benefits of peppermint tea.

  Links Peppermint oil in irritable bowel syndrome.

- H.-G. Grigoleit, and P. Grigoleit, Pharmacology and preclinical pharmacokinetics of peppermint oil, Johann-Sebastian-Boch-Str. 27, 65193 Weisbaden, Germany.

**Piper nigrum (piperine):**

The effect of black pepper (*Piper nigrum* L.) on tissue lipid peroxidation, enzymic and non-enzymic antioxidants are shown. Supplementation with black pepper or the active principle of black pepper, piperine, can reduce high-fat diet induced oxidative stress to the cells.

Piperine is an alkaloid responsible for the pungency of black pepper along with chavicine (an isomer of piperine). The active compound in *Piper nigrum* is piperine (1-piperoyl piperidine) which is responsible for bioenhancing effect. It is shown to possess bioavailability enhancing activity with various structurally and therapeutically diverse drugs.

It has been found that piperine's bioavailability-enhancing property may be attributed to increased absorption, which may be due to alteration in membrane lipid dynamics and change in the conformation of enzymes in the intestine.
Piperine has been demonstrated to increase the serum levels and lengthen the serum half-lives of some nutritional substances. It is speculated that piperine may act as a so-called thermonutrient and increase the absorption of certain nutritional substances from the gastrointestinal tract by producing a local thermogenic action. Piperine as the world's first bioavailability enhancer in 1979.

**Ref:**

- Umesh k patil, Amrit singh, Anup k chakraborty. Role of Piperine As A Bioavailability Enhancer. People’s Institute of Pharmacy & Research Centre, People’s University, Bhanpur, Bhopal-462037 (M.P.), India.


**Indication:**

- Helps to:
  - ✓ Regulate bile secretion.
  - ✓ Relieve spasm of bile ducts.
  - ✓ Maintaining the bile above saturation level.
  - ✓ Improve the function of liver.
  - ✓ Decrease cholesterol level.
- Enhances metabolic liver function by reducing biliary stasis.
- Indicated in the treatment of hepatobiliary disorders. Thus, helps for dissolution of gallstones.
- Useful to treat biliary tract disorders like Gallstone, Cholestasis.
- Regulates the bile secretion thus stone-up the function of digestive system.
- As it contains Mentha piperita, it relieves the problems of gallstone like, Nausea, Vomiting, etc.
- Acts as an antioxidant.