



THIOTRES

Glutathione 500 mg Tablets & Glutathione 600 mg Injection

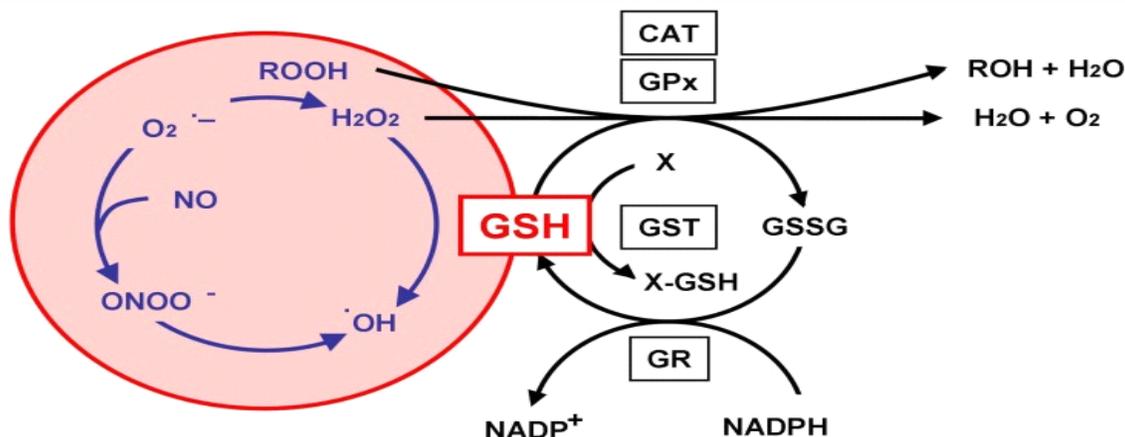
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Glutathione 500 mg Tablets & Glutathione 600 mg Injection

RESEARCH SAYS THAT:

- Glutathione (GSH) is an important intracellular antioxidant and its amount significantly reduced in chronic hepatitis C virus (CHC) patients. This is associated with increase oxidized GSH metabolite suggesting an increased GSH turnover¹.
- Daily GSH regimen appears to be associated in cystic fibrosis(CF) patients with significant improvement in lung function².
- Glutathione is an extremely important cell protectant, it directly quenches reactive hydroxyl free radicals, oxygen-centered free radical, radical centers on DNA and other bio-molecules which shows protective effects in diabetic nephropathy³.
- GSH significantly gets lower in diabetic cases and depleted in liver disease either due to non-alcohol or excessive alcohol intake⁴.

GLUTATHIONE WORKING AS AN ANTIOXIDANT:



REDUCED GSH LEVEL IN DIFFERENT LIVER ALIMENT:

| Sr. No. | Group | GSH content (gm/mg protein) |
|---------|--|-----------------------------|
| 01 | Normal Healthy Person | 3.58 + 0.25 |
| 02 | Non-Alcoholic Liver Disease | 2.93 + 0.13* |
| 03 | Alcoholic liver Disease(Moderate Alcohol Intake) | 3.16 + 0.16* |
| 04 | Alcoholic Liver Disease (High Alcohol intake) (n=46) | 2.17 + 0.15*@ |

*Indicates $p < 0.05$ when compared with normal healthy control and
 @ indicates $p < 0.05$ when compared with alcoholic liver disease with moderate alcohol intake.

Indian Journal of Clinical Biochemistry, 2005.



CLINICAL EVIDENCE

| OBJECTIVE | STUDY DESIGN | RESULT AND OBSERVATION |
|---|--|--|
| <p>Evaluate whether an antioxidant agent, glutathione prevents the development of NASH from Fatty liver (FL).</p> <p>(DOI: 10.5005/jp-journals-10018-1159)</p> | <p>5 patients with fatty liver (FL) and 10 patients with NASH have been enrolled in this study and 300 mg/day of glutathione given orally to patients with NAFLD everyday.</p> | <p>Before the treatment NASH group had higher level Serum 8-OHdG and Glutathione level than the FL.</p> <p>Levels of ALT, GGT and 8-OHdG decreased after the treatment in fatty liver (FL).</p> <p>Serum levels of ALT, 8-OHdG were decreased in NASH after treatment.</p> <p>Anti-oxidant therapy may prevent the progression of NAFLD to NASH through reduction of oxidative stress.</p> |
| <p>Determine the long-term effectiveness of oral GSH supplementation on body stores of GSH.</p> <p>(DOI 10.1007/s00394-014-0706-z)</p> | <p>A 6-month randomized, double-blinded, placebo-controlled trial of oral GSH (250 or 1,000 mg/day).</p> <p>(54 Adult)</p> | <p>GSH levels in blood increased after 1, 3 and 6 months versus baseline at both doses.</p> <p>A reduction in oxidative stress in both GSH dose groups was indicated by decreases in the oxidized to reduced glutathione ratio in whole blood after 6 months.</p> <p>Natural killer cytotoxicity increased [twofold in the high-dose group versus placebo at 3 months.</p> <p>Daily consumption of GSH supplements was effective at increasing body compartment stores of GSH.</p> |
| <p>Assess the efficacy of intravenous GSH in alcoholic hepatitis.</p> <p>(DOI: https://dx.doi.org/10.18535/jmscr/v5i3.101)</p> | <p>A randomized control study is conducted on 100 patients suffering from the alcoholic hepatitis, out of the total 100 patients 50 is treated with intravenous glutathione 1200mg/day and another 50 is treated conventionally without glutathione.</p> | <p>The administration of intravenous (iv) glutathione in such patient population has demonstrated a significant improvement in some indices of liver function (SGOT, SGPT, GTT), suggesting the use of glutathione in alcoholic hepatitis.</p> |

WHY THIOTRES???

- Reduced Oxidative stress and the presence of glutathione in NASH, prevent liver damage⁵.
- Glutathione (GSH) plays a major role in cellular protection against oxidative damage⁶.
- Reduced glutathione in Thiotres plays an important role against tissue oxidative damage, its depletion results in the accumulation of free radicals⁷.
- Depletion of gastric mucosal GSH may result in the accumulation of free radicals that can initiate membrane damage by lipid peroxidation⁷.
- Lower hepatic GSH levels are well known to occur in patients with alcoholic liver disease that can cause increase liver damage, in that case external supplementation is required⁸.

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DESCRIPTION:

- **Thiotres Tablets** is the film coated tablet consisting of Glutathione 500mg.
- **Thiotres Injection** is a combo pack of Vial (containing 600mg of Glutathione) and Water for injection.

INDICATIONS:

Alcoholic Liver Disease, Liver Cirrhosis, Liver Damage in HIV/HCV co-infection, In Gastritis

PHARMACOLOGY:

- Glutathione (GSH) is a water-soluble tripeptide composed of the amino acids glutamine, cysteine, and glycine.
- The thiol group is a potent reducing agent. GSH detoxifies a variety of electrophilic compounds and peroxides via catalysis by glutathione S-transferases (GST) and glutathione peroxidases (GPx).
- The tripeptide can exist intracellularly in either an oxidized (GSSG) or diminished (GSH) state and maintaining optimal GSH: GSSG proportions in the cell are basic to survival, so tight regulation of the system is required.
- A deficiency of GSH puts the cell at risk for oxidative damage.
- An imbalance of GSH is observed in a wide range of pathologies, including, cancer, neurodegenerative disorders, cystic fibrosis (CF), HIV and aging.

DOSAGE:

- **Thiotres Tablet:** One or Two tablets a day or as suggested by healthcare professional.
- **Thiotres Injection:** Depends on severity of disease, in mild to moderate condition 300-600 mg daily by slow intramuscular or intravenous injection.

ADMINISTRATION:

- **Intravenous Drip** - Dissolve with 5ml sterile water for injection, the solution is further diluted into 250ml or 500ml with normal saline or 5% glucose solution for intravenous infusion respectively.
- **Intramuscular injection** - Dissolved with 5ml sterile water for injection. Inject the solution intramuscularly, preferable in gluteal region.

STORAGE:

Store in cool and dry place below 25°C.

REFERENCES:

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