

## HAPPY LIVER MEANS HAPPY LIFE

### Clinical Trial Report of Dehlvi D-Ward Capsules

Rais ur Rahman, *et al.* (2014) conducted a randomized, single-blind, placebo-controlled clinical trial on pelvic inflammatory disease (PID) using Dehlvi D-Ward Capsules. A total of 40 patients were enrolled in the study, and Dehlvi D-Ward Capsules were administered at a dose of 2 capsules twice daily with plain water, starting on the 5th day of menses for a period of 21 days. The study revealed that the Dehlvi D-Ward Capsules group experienced a reduction in both subjective parameters (such as lower abdominal discomfort, vaginal discharge, foul smell, and painful coitus) and

# FEATURES

- > Protects Liver Cells From Damage
- > Protects Liver Against Toxins
- > Improves Digestion & Appetite
- > Helps Detox Liver Naturally
- Protects Liver Against Alcohol & Drug Induced Hepatitis
- > Effective For Fatty Liver
- Effective in The Management of Pelvic Inflammatory Disease (PID)

objective parameters (including fornical tenderness, cervical discharge, and cervical redness) when compared to the placebo group. Additionally, there was a significant reduction in neutrophil count in the test group after completion of the therapy. Throughout the study, no adverse events were reported by the patients, and no adverse effects were detected through clinical examinations or laboratory investigations. The findings suggest that Dehlvi D-Ward Capsules can be safely prescribed for the management of PID. The test drug is cost-effective, easily available, and well-tolerated by patients without any side effects. Source: International Journal of Ayurvedic and Herbal Medicine

### Scientific Studies of The Ingredients of Dehlvi D-Ward Capsules

#### Balcharr (Nardostachys jatamansi)

A study conducted by Ali Shakir, *et al.* (2000) revealed hepatoprotective activity of *Nardostachys jatamansi* in thioacetamide induced liver damage in rats. Pre-treatment of rats with the 50% ethanolic extract of the rhizomes of *N. jatamansi* (800 mg/kg body wt, orally) for three consecutive days significantly ameliorated the liver damage in rats exposed to the hepatotoxic compound thioacetamide. Elevated levels of serum transaminases (aminotransferases) and alkaline phosphatase, observed in thioacetamide alone treated group of animals, but these markers were significantly lowered in *N. jatamansi* pre-treated rats.

#### Mastagi (Pistacia lentiscus)

In a study done by Kanoni S, *et al.* (2021) on 98 patients with obesity (BMI greater than or equals to 30 kg/m2) and Non-Alcoholic Fatty Liver Disease (NAFLD). They were randomized to either mastic 2.1 g/day or placebo for 6 months. The outcome was improvement in total antioxidant status of NAFLD patients and interaction of mastic with cytokines and antioxidant biomarkers implicated in the pathogenesis of NAFLD.

#### Zafran (Crocus sativus)

Jiang H, et  $\alpha I$  (2023) determined the pharmacological effects and mechanisms of saffron extract in preventing and treating liver fibrosis through network pharmacology analysis combined with in vivo validation experiments. Based on the CCl<sub>4</sub>-induced liver fibrosis mice model, study confirmed that saffron extract can alleviate the severity and pathological changes during the progression of liver fibrosis. RT-PCR and Western blotting analysis confirmed that saffron treatment can prevent the CCl<sub>4</sub>-induced upregulation of Hypoxia-inducible factor 1 (HIF-1), Vascular endothelial growth factor A (VEGF-A), AKT, and Phosphoinositide 3-kinases (PI3K) pathways, suggesting that saffron may regulate AKT/HIF-1 /VEGF and alleviate liver fibrosis.

#### Tabasheer (Bambusa arundinaceum)

Elemental composition of the sample of Tabasheer determined by X-ray fluorescence shows presence of SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, CaO, MgO, TiO<sub>2</sub>, K<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub>, Si/Al. It is mainly composed of Silicic acid (Sio2) up to 96.9%, traces of iron, alum, alkalis and 1% organic matter Tabasheer from *Bambusa arundinaceum* contains mainly Silica 90.5 % and potash 1.1 %, alumina 0.4% and iron peroxide 0.9% in minute quantities (Klinowski J, *et al.* 1998). A study conducted by Parashuram B Teli and Aruna A Kanase (2020) demonstrated that Silicon from both SiO<sub>2</sub> and abhrak bhasma is hepatoprotective in 10 ml doses (I0 and 20 mg).

#### Darchini (Cinnamomum zeylanicum)

Hussain Z, et al. (2019) conducted a study to demonstrate the protective effects of *Cinnamomum zeylanicum* L. (Darchini) in acetaminophen-induced oxidative stress, hepatotoxicity and nephrotoxicity in mouse model. The results indicated that cinnamon aqueous extract exhibit a highly significant preventive potential by ameliorating acetaminophen-induced elevated levels of serum alanine aminotransferase, aspartate aminotransferase, creatinine, urea and macroscopic and histological alterations in liver and kidney.

#### Izkhar Makki (Cymbopogon jwarancusa)

In a study, conducted by Sumaiya S, et al. (2024), in which rats were orally treated with: 0.5% carboxymethyl cellulose (normal control), 50 mg/kg silymarin (reference standard), hydroalcoholic extract of Cymbopogon jwarancusa (HECJ) [515 mg/kg (low dose) and 720 mg/kg (high dose)] (test groups) for 7 days daily, followed by induction of hepatotoxicity using PCM (2 g/kg) on 7<sup>th</sup> day (PCM control; reference standard; test groups). The animals pre-treated with HECJ dose-dependently and significantly alleviated the PCM-induced alterations in liver enzymes, plasma proteins, serum total bilirubin and antioxidant markers levels. The histopathological analysis suggest that PCM causes marked necrosis and lymphocyte infiltration, while preservation of the normal hepatic architecture was observed in groups pre-treated with, reference standard drug silymarin, and HECJ.

#### Asaroon (Asarum europaeum)

In a study using rats, Cho EJ and Yoon SH (1999) found that injecting an aqueous extract of *Asarum* had a considerable hepatoprotective effect and reduced the amount of total cholesterol and phospholipids in the blood serum.

#### Qusht Shirin (Saussurea lappa)

The hepatotoxic effect of S. lappa root extracts against lipopolysaccharide (LPS)- and Dgalactosamine (D-GalN)-induced hepatitis in mice was assessed by Yaeesh S. *et al.* (2010) using both water and methanolic extracts. The liver damage caused by D-Gal and LPS was limited in its progression after treatment with varying dosages of S. lappa. The research indicates that the root extract inhibits hepatotoxic activity.

#### Gul-i-Ghafis (Gentiana olivieri)

Orhan DD, et al. (2003) evaluated hepatoprotective effect of *Gentiana olivieri* Griseb. *in vivo* models in rats. For the activity assessment on carbon tetrachloride-induced hepatic damage following biochemical parameters were evaluated; plasma and hepatic tissue malondialdehyde formation, and liver tissue glutathione level, as well as plasma transaminase enzyme levels (aspartate transferase and alanine transferase). Results of biochemical tests were also confirmed by histopathological examination. Through bioassay-guided fractionation procedures isoorientin, a known Cglycosylflavone, was isolated from the ethyl acetate fraction as the active antihepatotoxic constituent by silica gel column chromatography. Isoorientin exhibited significant hepatoprotective effect at 15 mg/kg b.w. dose.

#### Tukhm-i-Kasoos (Cuscuta reflexa)

Hamiuddin, *et al.* (2006) administered *Cuscuta reflexa* seeds and *Sapindus trifoliatus* orally to the different groups of albino rats in the form of aqueous extract, alcoholic extract and powder (infusion). The biochemical and histopathological studies confirmed the hepatoprotective activity of these drugs and showed significant difference in enzyme markers (SGOT, SGPI), blood urea, serum alkaline phosphatase, serum protein/albumin and serum cholesterol level, when compared with CCl<sub>4</sub> induced toxicant group.

#### Majeeth (Rubia cordifolia)

Babita MH, et al. (2007) screened various extracts of roots of *R. cordifolia* for its hepatoprotective activity using thioacetamide induced hepatotoxicity in rats. The activity was assessed through estimation of biochemical parameters viz. Serum Glutamate Pyruvate Transaminase (SGPT) and Serum Glutamate Oxaloacetate Transaminase (SGOT), further the results were supplemented with histopathological studies on liver samples of the treated animals. The methanolic extract protects the liver of the animals against thioacetamide induced hepatotoxicity. Histology of the liver sections of animals treated with methanolic extract showed the normal hepatic architecture with absence of necrosis, which further evidence the hepatoprotective activity.

#### Luk Maghsool (Laccifer lacca)

A hepatoprotective study of a non-pharmacopoeial formulation containing *Laccifer lacca* body extract (LBE) against carbon tetrachloride (CCl<sub>4</sub>) induced liver toxicity was conducted by Khan NA (2019) on albino rats. The hepatotoxicity was induced using carbon tetrachloride (Ccl<sub>4</sub>). The results showed that the formulation prevented CCL<sub>4</sub> induced elevation of serum ALT, AST, ALP, total bilirubin, and total protein level. Lipid peroxidation also decreased, and hepatocytes regeneration was also observed after using test formulation. This study revealed the significant hepatoprotective activity of LBE containing formulation compared to silymarin.

#### Tukhm Kasni (Cichorium intybus)

Khalid A, *et al.* (2018) evaluated *Cichorium intybus* seed extract (100, 250 and 500 mg/kg doses) and a 25 mg/kg dose of silymarin (as standard drug). The drugs were administered orally to separate groups of albino Wistar rats for 14 days. Oral administration of different doses of *C. intybus* seed extract significantly (p < 0.01) protected the hepatic cells from impairment. The biochemical markers and haematological parameters were also normal in extract-treated rats in contrast to the standard

#### (silymarin) and control groups.

#### Tukhm Karafs (Apium graveolens)

Anubha Singh and SS Handa (2000) demonstrated anti-hepatotoxic effect of methanolic extracts of the seeds of *Apium graveolens* L. and *Hygrophila auriculata* on rat liver damage induced by a single dose of paracetamol (3 g/kg p.o.) or thioacetamide (100 mg/kg, s.c.). there was significant reduction in liver enzymes, viz. serum transaminases (SGOT and SGPT), alkaline phosphatase, sorbitol dehydrogenase, glutamate dehydrogenase and bilirubin in serum. Furthermore, hepatic tissues were processed for assay of triglycerides and histopathological alterations simultaneously. A significant hepatoprotective activity of the methanolic extract of the seeds of both the plants was reported.

#### Zarawand (Aristolochia)

Nivedhitha S and Indumathy R (2022) evaluated Aristolochia bracteolate for its anti-tubercular and hepatoprotective properties. The results of (minimum inhibitory concentration) MIC on Mycobacterium showed that the petroleum ether extract possess good anti-mycobacterial activity at 25  $\mu$ g/ml. It also showed good hepatoprotective activity against isoniazid (INH) induced toxicity on increasing concentrations. So, the plant has the potential to act as adjunct to TB chemotherapy.

#### Habbe Balsan (Balsamodendron opobalsamum/ Commiphora opobalsamum)

The hepatoprotective activity of an ethanolic extract of Commiphora opobalsamum ("Balessan") was investigated by TA Al-Howiring, et al. (2004) in rats by inducing hepatotoxicity with carbon tetrachloride: liquid paraffin (1:1). This extract has been shown to possess significant protective effect by lowering serum transaminase levels (serum glutamate oxaloacetate transaminase and serum glutamate pyruvate transaminase), alkaline phosphatase and bilirubin. Pre-treatment with an extract of Balessan prevented the prolongation of the barbiturate sleeping time associated with carbon tetrachloride-induced liver damage in mice. On the other hand, CCI4-induced low-level nonprotein sulfhydryl concentration in the liver was replenished by the Balessan extract. These data suggest that the plant C. obalsamum may act as an antioxidant agent and may have a hepatoprotective effect.

#### Ood Garqi (Aquilaria agallocha)

PB Miniyar, et al. (2008) evaluated ethanolic extract of Aquilaria agallocha (EAA) bark. The EAA was studied for its inhibitory effects on methaemoglobin, oxidation product of haemoglobin, produced by treatment with sodium nitrite. The antioxidant effect of EAA was tested at different concentrations. It was observed that EAA showed antioxidant activity at lower concentration range. Aquilaria agallocha bark exhibits significant hepatoprotective effects, primarily due to its

#### antioxidant and anti-inflammatory properties.

## Qaranfal (Myrtus caryophyllus/Syzygium aromaticum)

AE AI-Hadary, *et al.* (2015) demonstrated hepatoprotective effect of *Syzygium aromaticum* against CCl₄ induced hepatotoxicity in rats. Hepatic malondialdehyde levels were reduced and glutathione levels were elevated in *cold-pressed S. aromaticum oil* (CO) treated rats. CO reduced the activities of AST, ALT, and ALP as well as kidney function markers, protein, and lipid profiles, respectively. Histopathological examination of liver indicated that CO treatment reduced fatty degenerations, cytoplasmic vacuolization, and necrosis.

#### Heel-i-Khurd (Elettaria cardamomum)

Nimmy Chacko, *et al.* (2012) evaluated the methanolic extract of *Elettaria cardamomum* at doses of 100, 200 and 400 mg/kg against paracetamol induced hepatotoxicity in albino Wistar rats. The hepatoprotective activity was assessed using various biochemical parameters like alanine aminotransferase, alkaline phosphatase and total bilirubin along with histopathological studies of liver. *Elettaria cardamomum* exhibited significant hepatoprotective activy by reversing

altered biochemical parameters. Further hepatoprotective activity was reinstated by the normal hepatocytes, absence of necrosis and fatty infiltration in the treatment group.

#### Gul-i-Surkh (Rosa damascena)

Md Ashraful Alam, et al. (2008) screened hepatoprotective activity of the alcoholic extract of Rosa damascena against paracetamol induced acute hepatotoxicity in rats. Liver damage was assessed by estimating serum enzyme activities of aspartate aminotransferase, alanine histopathology of liver tissue. Pre- and posttreatment with ethanolic extracts showed a dosedependent reduction of paracetamol induced elevated serum levels of enzyme activity. The mechanism underlying the protective effects was assayed in vitro and the R. damascena extracts displayed dose-dependent free radical activity using 2, 2-diphenyl-1-picrylhydrazyl (DPPH) and thiobarbituric acid (TBA) method. The hepatoprotective action was further confirmed by histopathological observation. The ethanolic extracts reversed paracetamol induced liver injury. These results suggest that the hepatoprotective effects of *R. damascena* extracts are related to its anti-oxidative activity.



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