HEPATOPROTECTIVE EFFECT OF FLAMIN/SILYMARIN MIXTURE EXTRACTED FROM HELICHRYSUM RUBICUNDUM AND SILYBUM MARIANUM PLANTS

L.M.Arshakyan, S.A. Buloyan, H.S. Ananikyan, H.V.Gasparyan

A Scientific Technological Center of Organic and Pharmaceutical Chemistry NASRA
RA, 0014, Yerevan, Azatutyan 26

l.m.arshakyan@gmail.com

Medicinal plants are the significant source of Hepatoprotective drugs from which are “Flamin” derived from flavonoids of Helichrysum arenarium and "Silymarin" that consists of four flavonolignan isomers namely -silybin, isosilybin, silydianin and silychristin obtained from Silybum marianum [1, 2].

In the current study, we sought to investigate hepatoprotective properties of Flamin/Silymarin mixture on carbon tetrachloride (CCl_4) - induced liver fibrosis in rats. Flamin and Silymarin medical extracts (drugs) obtained from Helichrysum rubicundum (with 6% yield as in Flamin drugtechnology) and Silybum marianum plants growing in Armenia.

The Wistar rats were divided into five groups: 1) intact group, 2) CCl_4 group, CCl_4 + 8 week recovery period, Flamin/Silymarin (1:1) treated group (300mg/kg 3 times weekly 8 weeks), Flamin/Silymarin (1:2) treated group (300mg/kg 3 times weekly 8 weeks). Liver injury was induced by the intraperitoneal (I.P) injection of 2 ml/kg CCl_4 (30% in olive oil) twice weekly for 2 weeks.

Histopathological observation shows that in liver tissue of the group administered CCl_4 there were prominent infiltration, necrosis and karyolysis of hepatocytes, bile was accumulated in intrahepatic space (Fig. 1b). After 8-week recovery period, there were prominent hepatic karyolysis, fatty degeneration, lymphocytic infiltration around portal triads and migration of fibroblasts (Fig. 1c). Compare with previous group in animals treated with Flamin/Silymarin (1:1) the liver tissue observed less dystrophic and destructive changes, fibrous septae were absent (Fig. 1d). In group treated with Flamin/Silymarin in ratio 1:2, hepatic architecture was preserved, fibrous septae were absent, simultaneously observed moderate fatty degeneration and karyopyknosis (Fig. 1e).

Obtained data demonstrate that Flamin/Silymarin mixture showed significant hepatoprotective effect in liver fibrosis model induced by CCl_4. Moreover, 1:2 ratio of this mixture show more effectiveness compared with 1:1.

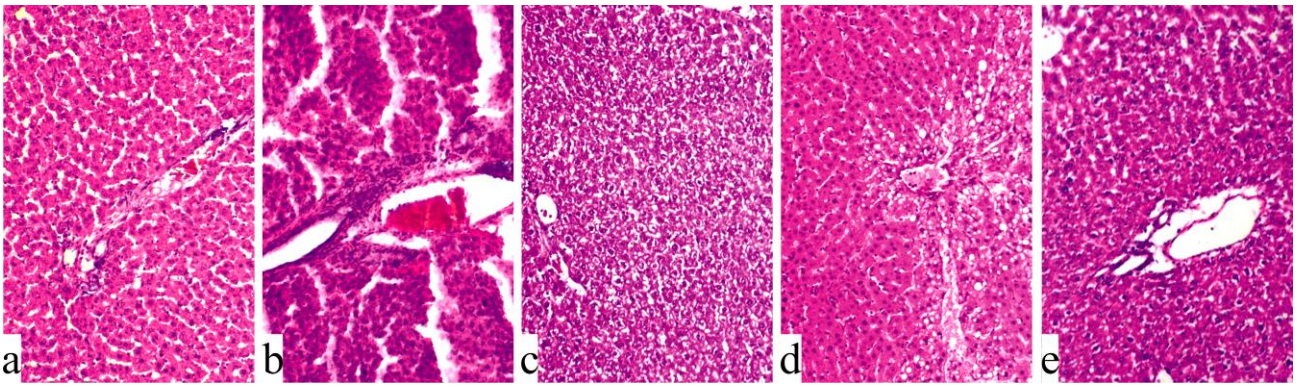

Figure 1. Photomicrographs of the liver tissue stained with H&E (x125). **a)** Intact rat; **b)** Rats treated with CCl_4: **c)** CCl_4 + 8-week recovery period; **d)** Flamin/Silymarin (1:1) treated group; **e)** Flamin/Silymarin (1:2) treated group.

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