Re: "Protective Role of Silymarin and Deferoxamine against Iron Dextran-Induced Renal Iron Deposition in Male Rats," and "Co-Administration of Silymarin and Deferoxamine against Kidney, Liver and Heart Iron Deposition in Male Iron Overload Rat Model"

Safoora Mazaheri[1], Behjat Alsaadat Moaeidi[2], Mehdi Nematbakhsh[1,3,4]

[1]Department of Physiology, Water and Electrolytes Research Center, Isfahan University of Medical Sciences, Isfahan, Iran, [2]Department of Immunology, Isfahan University of Medical Sciences, Isfahan, Iran, [3]Department of Physiology, Isfahan University of Medical Sciences, Isfahan, Iran, [4]Isfahan MN Institute of Basic and Applied Sciences Research, Isfahan, Iran

Correspondence to:
Prof. Mehdi Nematbakhsh,
Department of Physiology,
Water and Electrolytes Research Center,
Isfahan University of Medical Sciences,
Isfahan, Iran.
E-mail: nematbakhsh@med.mui.ac.ir

Date of Submission: Feb 08, 2014

Date of Acceptance: Mar 28, 2014

How to cite this article: Mazaheri S, Moaeidi B, Nematbakhsh M. Re: "Protective Role of Silymarin and Deferoxamine against Iron Dextran-Induced Renal Iron Deposition in Male Rats," and "Co-Administration of Silymarin and Deferoxamine against Kidney, Liver and Heart Iron Deposition in Male Iron Overload Rat Model". Int J Prev Med 2014;5:800-1.

Letters to Editor

DEAR EDITOR,

Recently, two articles entitled "Protective role of silymarin (SM) and deferoxamine (DF) against iron dextran-induced renal iron deposition in male rats," and "Co-administration of SM and DF against kidney, liver, and heart iron deposition in male iron overload rat model" were published in International Journal of Preventive Medicine.[1,2] The authors used two different models of iron overloading in rats and investigated the protective role of SM, DF and combination of both against iron dextran-induced renal iron deposition. However, they did not report the change of liver enzymes. There are some mechanisms that shows iron overload make liver injuries such as, hepatocellular necrosis, inflammation, and in some cases even carcinoma.[3,4] Therefore, we measured and analyzed the serum level of alanine aminotransferase (ALT), aspartate amino transferase (AST) and alkaline phosphatase (ALP) in animals of these two protocols of iron overloading (see published articles[1,2] for complete methods and groups designs). The results are shown in Figure 1. Serum level of AST, in protocol one, in groups overloaded with iron dextran and treated with combination of DF and SM increased significantly when compared with iron dextran overloaded alone group ($P < 0.05$). Serum level of ALT has no significant difference between groups in both protocols. Serum level of ALP, in protocol one, has no significant difference between groups. However, in protocol two, the serum level of ALP was decreased in all treated groups when compared with placebo treated group, but significant difference was observed between placebo treated group and iron dextran alone treated group ($P < 0.05$). The protective role of SM on the serum level of ALT was reported in different iron overloading model in rats.[5] It seems that protective role of SM, DF or combination of both is strongly depended on model and severity of iron overloading.

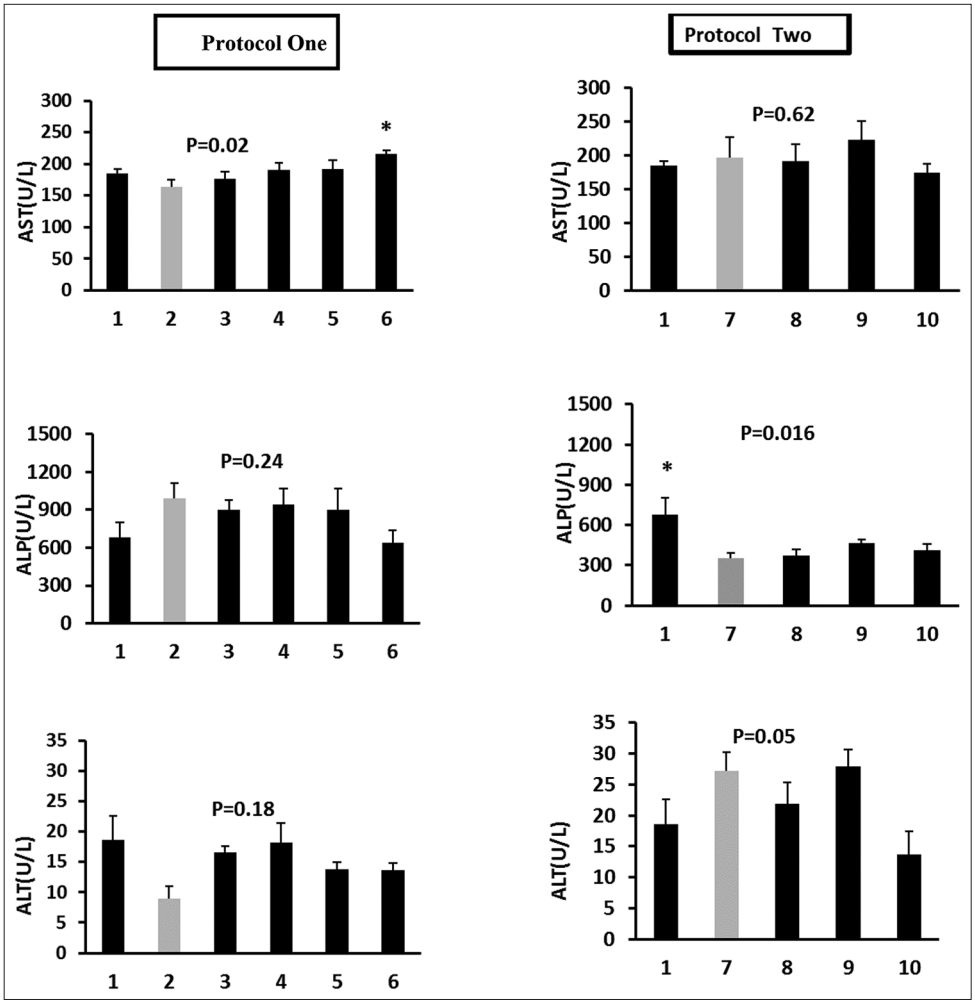

Figure 1: Serum levels of aspartate amino transferase, alanine aminotransferase, and alkaline phosphatase in two protocols of iron overloading rats experiment (references 1 and 2 for the protocols). In protocol one, groups 2–6 received iron dextran 200 mg/kg every other for 4 weeks, but from 3rd week the animals were treated with placebo (group 2), silymarin (SM) 200 mg/kg/2 days (group 3), deferoxamine (DF) 50 mg/kg/2 days (group 4), SM 400 mg/kg/2 days (group 5), and combination of DF and SM (group 6). Group 1 received placebo only. In protocol two, groups 7–10 received iron dextran 100 mg/kg every other day during the first 2 weeks, and then, during the 3rd week, the iron dextran was discontinued, and the animals were treated daily with placebo (group 7), SM (group 8), DF (group 9), and combination of SM and DF (group 10). *indicates significant from iron dextran alone treated group ($P < 0.05$)

REFERENCES

1. Nematbakhsh M, Pezeshki Z, Moaeidi BA, Eshraghi-Jazi F, Talebi A, Nasri H, *et al*. Protective Role of Silymarin and Deferoxamine Against Iron Dextran-induced Renal Iron Deposition in Male Rats. Int J Prev Med 2013;4:286-92.
2. Navidi-Shishaone M, Mohhebi S, Nematbakhsh M, Roozbehani S, Talebi A, Pezeshki Z, *et al*. Co-Administration of Silymarin and Deferoxamine against Kidney, Liver and Heart Iron Deposition in Male Iron Overload Rat Model. Int J Prev Med 2014;5:110-6.
3. Zhao Y, Li H, Gao Z, Xu H. Effects of dietary baicalin supplementation on iron overload-induced mouse liver oxidative injury. Eur J Pharmacol 2005;509:195-200.
4. Peretz G, Link G, Pappo O, Bruck R, Ackerman Z. Effect of hepatic iron concentration reduction on hepatic fibrosis and damage in rats with cholestatic liver disease. World J Gastroenterol 2006;12:240-5.
5. Najafzadeh H, Jalali MR, Morovvati H, Taravati F. Comparison of the prophylactic effect of silymarin and deferoxamine on iron overload-induced hepatotoxicity in rat. J Med Toxicol 2010;6:22-6.

Source of Support: Nil **Conflict of Interest:** None declared.