

Re: Protective Role of Silymarin and Deferoxamine against Iron Dextran - Induced Renal Iron Deposition in Male Rats

Azar Baradaran, Mahmoud Rafieian-Kopaei¹

Department of Pathology, Isfahan University of Medical Sciences, Isfahan, Iran, ¹Department of Pharmacology, Medical Plants Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran

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Correspondence to:

Prof. Mahmoud Rafieian-Kopaei,
Medical Plants Research Center,
Shahrekord University of Medical
Sciences, Sharekord, Iran.
E-mail: rafieian@yahoo.com

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DEAR EDITOR,

We read with respect the paper “Protective role of Silymarin and deferoxamine against iron dextran induced renal iron deposition in male rats by Nematbakhsh *et al.*^[1] It is an interesting paper; however, I would like to add some complementary comments to it. In this paper the Silymarin reduced the kidney iron deposition in an iron overload model. The findings have demonstrated that Silymarin with the dose of 200 mg/kg potentially has more protective effect than deferoxamine against kidney iron deposition. This effect of Silymarin in this experiment was attributed to its antioxidant activities. Liver is one of the most probable organs which may be damaged due to iron load. The common presentation of iron load is hepatic cirrhosis. Silymarin has long been recognized for its hepatoprotective activities.^[2-4] Silymarin is a standardized extract of *Silybum marianum* or milk thistle seeds. It contains a mixture of flavonolignans consisting of silibinin, isosilibinin, silicristin and silidianin. Silibinin, also known as silybin, is the major active constituent of Silymarin. Both laboratory and animal studies suggest that Silimarin and silibinin have hepatoprotective properties against a wide variety of toxins. The efficacy of Silymarin in preventing drug-induced liver damage in patients taking psychotropic drugs long-term

has been investigated which have shown promising effects.^[5-7] It has also been capable of regenerating the cells which may help treating serious conditions such as chronic hepatitis, cirrhosis, and toxic fatty deposits in the liver. Silymarin inhibits the toxins from entering the liver cells, preventing liver damage.^[5-7] Silymarin also can aid generating new cells and repairing injured cells in the liver, by stimulating protein synthesis through the enzyme ribonucleic acid polymerase. Silymarin’s protective effect is also due to its powerful antioxidant activity, neutralizing harmful free radicals that result from normal metabolic processes. It significantly increases the levels of glutathione and superoxide dismutase which are two endogenous antioxidants.^[8] Therefore, in iron overload which cause serious liver damage, Silymarin should be a promising drug for prevention and treatment of this condition. It is notable that Silymarin recently has shown to be as important for kidney health as for liver. Silymarin concentrates in kidney cells and increase protein and nucleic acid synthesis. Recent studies showed that Silymarin was able to increased cell replication by 25-30%.^[9-11] This effect was attributed to Silybin and Silychristin, two important components of Silymarin.^[9-11] Amore recent trial conducted on 60 diabetic patients showed that the group which received Silymarin had at least a 50% decrease

in urine albumin-creatinine ratio after 3 months of Silymarin treatment.^[12] Therefore, potential efficacy of Silymarin in the treatment of kidney damage in other serious conditions should be added to its beneficial effects in renal iron overload. Iron overload also increase the risk of diabetes and other cardiovascular diseases.^[13-15] Silymarin has also shown beneficial effects on a wide range of disorders including diabetes and cardiovascular disorders. Therefore, the beneficial effects of Silymarin in iron overload are not limited to kidney damage.

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