Comment on: The Protective Role of Silymarin and Deferoxamine Against Iron Dextran-Induced Renal Iron Deposition in Male Rats

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DEAR EDITOR,

The recently published an article by Nematbakhsh *et al*., entitled "Protective role of silymarin and deferoxamine against iron dextran-induced renal iron deposition in male rats," had some interesting point's needs to explain more. They studied rats, which were allocated to six group and they received iron dextran for a period of 4 weeks every other day, but at the beginning of week 3, they also were subjected to a 2-week (every other day) treatment with the vehicle (Group 2, positive control), silymarin (Group 3), deferoxamine (Group 4), silymarin (Group 5), and combination of silymarin and deferoxamine (Group 6). In this study, the levels of serum creatinine, blood urea nitrogen, iron, ferritin, and nitrite were determined, and the kidneys were removed for histopathological investigations. The results of this study showed that, silymarin, and deferoxamine treatments reduced the intensity of the kidney iron deposition, but only in the silymarin group, a significant reduction in kidney iron deposition was observed. They concluded that silymarin is a nephroprotectant agent against injurious insult of iron deposition in the kidneys of animal models.[1] While, nephropathy is one of the most important complications of diabetes mellitus,[2-6] I would like to mention a few points about, the study conducted by Nematbakhsh *et al*. In type 2 diabetes, metformin has been widely used for the treatment blood glucose elevation.[7-10] Recently, attention has been made toward the possible kidney protective properties of metformin.[8] In the study conducted by Morales *et al*., observed that gentamicin-induced renal tubular injury is attenuated by metformin.[8] To find the potential efficiency of metformin to renal protection against gentamicin-induced acute renal injury and also to examine whether postpone treatment with metformin in acute kidney injury, exerts similar benefits on gentamicin-renal toxicity in rats, we conducted a study on Wistar rats.[10] We found that metformin was able to prevent and attenuate gentamicin-induced acute kidney injury. Hence, it might be beneficial in-patients under treatment with this drug.[10] Furthermore, in the study conducted by Fallahzadeh *et al*., silymarin reduces urinary excretion of albumin, tumor necrosis factor α, and malondialdehyde in patients with diabetic kidney disease. They used silymarin in association with the renin-angiotensin system inhibitors or angiotensin receptor blockers and found this combination therapy was more effective than using the renin-angiotensin system inhibitors or angiotensin receptor blockers. They concluded that silymarin may be considered as a novel addition to

the anti-diabetic nephropathy armamentarium.[11] Thus, according to the kidney protective efficacy of silymarin in the study of Nematbakhsh *et al*., and hypoglycemic effect of this medicinal plants in the study conducted by Sheela *et al*.,[12] it is reasonable that the combination of metformin, silymarin and renin-angiotensin system inhibitors or angiotensin receptor blockers may have additive renoprotective efficacy beyond controlling the diabetes.[13-20] In this regard, to better understand the kidney protective properties of silymarin, especially in combination with metformin, renin-angiotensin system inhibitors or angiotensin receptor blockers more experimental rat models or clinical studies are suggested.

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