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Tehran University of Medical Sciences, Iran

Introduction: Change in the metabolism of drugs is very likely in diabetes mellitus. is study assessed the changes in enzymatic activity of CYP450 2C19 in liver by using omeprazole as probe in the animal model of type II diabetes, before and a er administration of metformin and cinnamon.

Method: 28 male Wistar rats randomly divided into 7 groups. 7 days a er induction of diabetes type 2, test groups received metformin, cinnamon and metformin plus cinnamon daily for 14 days. In day 21, rats were subjected to liver perfusion by Krebs-Henselit bu er containing omeprazole as CYP2C19 probe. Perfusate samples were analyzed by HPLC-UV in order to evaluate CYP2C19 activity.

Result: e average metabolic ratio of omeprazole was changed from 0.091±0.005 in the control group to 0.054±0.005 in the untreated diabetic group (p-value=0.003). is average was increased inordinately to 0.218±0.036 in the treated group with metformin. Interestingly, administration of cinnamon with metformin in diabetic rats caused the enzyme activity to return (0.085±0.002) to the observed levels (0.091±0.005) in control group (p-value=0.26).

Conclusion: e results of the study showed that despite the suppression of CYP2C19 enzyme activity in type 2 diabetic rats, administration of metformin can severely increase the enzyme activity. Surprisingly, simultaneous use of cinnamon and metformin can modulate the function of CYP2C19 to the observed level in control group and make it more predictable to treat diabetes mellitus and fate of other drugs that metabolize by this enzyme.

Hanieh Entezari has completed PhD from Tehran University of Medical Sciences. Her current position is pharmacist in the Sina Hospital. She has done some research in bio-pharmacy and pharmacognosy lab. She has participated in PCS 2nd Global Diabetes Conference (GDC-2017), Prague, Czech Republic and 14th Iranian Pharmaceutical Sciences Congress (IPSC), Tehran University of Medical Sciences, School of Pharmacy, Iran (2016). She has experience in handling and surgery of animal lab and can work with HPLC device.

tums1391@yahoo.com