

The Effect of Diabetes Mellitus and Fasting on Gene Expression of Drug-Metabolizing Enzymes in the Livers of Mice

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Abstract

Different drug responses and adverse effects were reported in diabetic patients during Ramadan. This present research aimed to find out the effects of diabetes mellitus (DM) and fasting on the mRNA expression of major hepatic drug-metabolizing enzymes (DMEs) in mice. Thirty-two male-Balb/c mice were divided into four groups, and two groups were injected with streptozocin to induce DM. The mice were subjected to fast. Finally, the expression of mouse DMEs *cyp1a1*, *cyp2c29*, *cyp2d9*, and *cyp3a11* were analyzed using Real-time polymerase chain reaction(RT-PCR).

It was found that DM had a significant effect on the expression of hepatic mRNA for DMEs by decreasing their expression while fasting caused unregulated their expression. Fasting influence more on the expression of mouse hepatic DMEs more than DM. Further studies are needed to find out the influence of other factors on the expression of hepatic DMEs during fasting.

Keywords: Drug-Metabolizing Enzymes, Intermittent-fasting, mRNA Expression, Ramadan fasting.