

SHORT COMMUNICATION

METABOLISM OF LIDOCAINE BY LIVER MICROSOMES FROM STREPTOZOTOCIN-DIABETIC RATS

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Taking into consideration a number of diabetic patients and a paucity of available data on drug pharmacokinetics, it is important to characterise metabolism of drugs, which can be applied in such a group of patients. The aim of the present study was to evaluate metabolism of lidocaine by liver microsomes from streptozotocin-diabetic rats. Liver microsomes were prepared by differential centrifugation and *in vitro* metabolic studies were carried out at linear dependence of the metabolite formation on time, as well as protein and substrate concentrations. The formation rate of monoethylglycinxylydide (MEGX), main lidocaine metabolite on N-deethylation pathway, was evaluated. It was found that both specific and molecular activity of P-450 N-deethylation pathway was significantly reduced in streptozotocin-diabetic animals. The specific activity of cytochrome P-450 was significantly reduced by 69.3% ($p < 0.05$) in diabetic animals in comparison to the controls. Similarly, the molecular activity of the enzyme in streptozotocin-diabetic rat microsomes decreased by 72.5% ($p < 0.05$). The observed changes indicate an impairment of N-deethylation, i.e. a possible decrease in enzymatic activity of CYP3A2 and CYP1A2, which are the major enzymes catalyzing this reaction.

Key words: experimental diabetes, lidocaine metabolism, microsomes

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