EFFECT OF MICROSOMAL MONOOXYGENASES INDUCTORS ON HEPATIC Mg\(^{+2}\)-ADENOSINE TRIPHOSPHATASE AND ACID PHOSPHATASE ACTIVITIES IN AGING RATS

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ABSTRACT

Introduction: The activities of Mg\(^{+2}\)-adenosine triphosphatase and acid phosphatase in the liver of aging rats were studied.

Material and Methods: The study was performed on male Wistar rats aged 0.5, 1, 2, 4, 8, 12, 20 and 28 months. The groups were treated with phenobarbital, \(\beta\)-naphthoflavone or dexamethasone.

Results: Mg\(^{+2}\)-ATP-ase activity increased from 2 weeks to 12 months. Only in senescent rats did the Mg\(^{+2}\)-ATP-ase activity decrease. \(\beta\)-Naphthoflavone and dexamethasone decreased Mg\(^{+2}\)-ATP-ase in all age groups. Phenobarbital also decreased Mg\(^{+2}\)-ATP-ase except for the oldest rats. Acid phosphatase activity increased to 1 month. From 2-months AcP-ase activity did not change. Phenobarbital increased AcP-ase activity at 2- and 4-months only. The \(\beta\)-naphthoflavone in youngest groups decreased AcP-ase activity, but in the remaining age groups no effects were observed. Dexamethasone decreased AcP-ase activity in an age-dependent manner.

Conclusions: (i) the activity of the enzymes under study was decreased by phenobarbital, \(\beta\)-naphthoflavone and dexamethasone; (ii) the activity of acid phosphatase in periportal hepatocytes was higher but Mg\(^{+2}\)-ATP-ase activity was the same as in centrilobular cells.

Key words: Mg\(^{+2}\)-ATP-ase, AcP-ase, age, liver, rat

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