Taurina e Fenitoína. A difenilhidantoína aumenta os níveis de taurina intracelular

A taurina é um dos principais aminoácidos que mantém a osmolalidade intracelular. Ela possui a capacidade de estruturar a água citoplasmática e desta maneira mantém a estrutura e o funcionamento das enzimas, DNA, RNA e macromoléculas. É uma das maneiras de diminuir sofrimento celular.

José de Felippe Junior

Taurina

Baskin, Leibman, De Witt, Orr, Tarzy, Levy, Krusz, Dhopesh and Schraeder, Neurology (1978), 1735 examined platelet taurine levels, as a model for nerve-ending bio-chemistry, in epileptic patients. Patients whose seizures were controlled by PHT had significantly higher platelet taurine levels than patients not receiving PHT.


Baskin and Finney, The Effects of Taurine on Excitable Tissues (1981), 2152 studied the effect of PHT on taurine concentrations in the rat brain. They found that PHT (25 mg/kg), one hour prior to measurement, increased cerebellar, brainstem and cerebral taurine. At 50 mg/kg PHT and above, there was reduction in taurine levels. The authors suggest that PHT exerts its therapeutic effect by increasing endogenous taurine levels.


Pozdeev, Mediator Processes in Epilepsy (1983), 2878 studied the effects of PHT on rat brain neurotransmitter systems. Whole brain analysis of rats treated with PHT, 37.5 mg/kg twice a day, intraperitoneally, for seven days, showed increased levels of taurine (48%). Treatment with PHT, 75 mg/kg twice a day for three days, which led to toxicity in some animals, decreased taurine levels (50%). Taurine levels normalized in these animals with continued PHT treatment.


Gurevich, Matveeva, Ogurechnikov and Korovkina, Farmakologiia i Toksikologiia (1984), 2562 found that PHT increased incorporation of [14C]-taurine by rat cerebral cortex microsomes, suggesting the importance of PHT's effects on intracellular membranes. The greatest effect (doubling of incorporation) was seen at 400 µM PHT. Higher doses were inhibitory. PHT (200 µM) increased [14C]-taurine uptake in cultured C1300 neuroblastoma cells. PHT had no effects on [14C]-glycine incorporation. Phenobarbital had no effects on either taurine or glycine incorporation. The authors suggest that PHT's effects on taurine may be important in its modulation of nervous system hyperexcitability.


Izumi, Kishita, Nakagawa, Huxtable, Shimizu, Koja and Fukuda, Progress in Clinical and Biological Research (1985), reported that treatment of mice with 1% guanidinoethane sulfonate for nine days lowered taurine levels by 24%. Under these circumstances, the effectiveness of PHT and phenobarbital against maximal electroshock seizures was less.


