P54

Study on the anticonvulsive and sedative effect of Heichumhwan

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In order to evaluate the anticonvulsive and sedative effects of Heichumhwan (豨薟丸), which is one of traditional sedative drugs in Korea, potentiation on pentobarbital-induced sleeping time, inhibitory effect on GABA transaminase activity, brain GABA level, brain glutamate level, antioxidative activities, agonistic effect on GABA/benzodiazepine receptor and anticonvulsive effect have been investigated *in vivo* and *in vitro*.

The results were summerized as follows :

1. Heichumhwan lengthened dose-dependently the pentobarbital-induced sleeping time compared to the control group.
2. Heichumhwan inhibited GABA transaminase (GABA-T) activity *in vivo* in a dose-dependent manner compared to the control group.
3. Heichumhwan enhanced strongly the brain GABA level in a dose-dependent manner compared to the control group.
4. Heichumhwan reduced some brain glutamate level in a dose-dependent manner compared to the control group.
5. Heichumhwan inhibited dose-dependently brain lipid peroxidation *in vitro* and also *in vivo*.
6. Heichumhwan showed relatively strong DPPH radical scavenging activity, corresponding to about one tenth of the activity of tocopherol
7. Heichumhwan exhibited a weak agonistic activity to the GABA/ benzodiazepine receptor complex in rat cerebral cortices.
8. Heichumhwan lengthened the onset time of convulsion, shortened the convulsion duration and diminished lethality, showing an anticonvulsive effect.

As a result, Heichumhwan may be useful and applicated for the anticonvulsant and/or sedative.