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Poster Sessions

Comparison of the effects of Goreisan and loxoprofen on cerebral blood flow dynamics in meteoropathy model mice

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Migraine is a common neurovascular disorder characterized by severe headaches and is associated with dysfunction of the autonomic nervous system. Notably, some patients who have migraine seem to be more sensitive to changes in the weather such as atmospheric pressure and humidity. Here, we investigated the effect of Goreisan, a traditional Kampo medicine used to treat headaches, on the cerebral blood flow (CBF) dynamics by using implantable CMOS imaging device for detecting hemodynamic signal in female meteoropathy model mice. Moreover, we evaluated the effect of loxoprofen, an analgesic used to treat headaches, on the CBF changes and compared it to the effect of Goreisan. To reproduce the change of the weather, atmospheric pressure was lowered by 50 hPa and kept this level for 1 h and it was returned to the previous level. We observed the increase in CBF during low atmospheric pressure, which was prevented by Goreisan (1 g/kg, p.o.) as well as loxoprofen (4 mg/kg, p.o.). Although CBF gradually recovered to baseline after returning to normal atmospheric pressure, Goreisan, but not loxoprofen, lowered CBF below baseline. These results suggest that Goreisan is the headache therapeutic drug with a different action profile from loxoprofen in that it has a mechanism to actively reduce cerebral blood flow.