

Can *Uncaria rhynchophylla* alleviate damages produced by ketamine?

Executive summary

The study was to evaluate the effects of Gouteng on ketamine toxicity of the model in mice, particularly whether Gouteng would ameliorate the harmful effect of ketamine. Methods employed included behavioral, biochemical, immunohistochemical and histopathological studies. Toxic effects of ketamine on the liver and heart were downregulated via observation on histopathology and electrocardiogram (for heart). In the kidney, interaction of Gouteng and ketamine indicated decrease of inflammatory cells and the number of degenerating glomeruli. However, the number of degenerating glomeruli was still higher than control. In the urinary bladder, Gouteng treatment in ketamine mice led to a high degree of recovery in epithelium, lamina propria and muscle layers with decrease of inflammatory cells. Studies of the central nervous system (CNS) demonstrated that Gouteng interaction with ketamine appeared to improve the consolidated memory of the mice and downregulate the number of dead cells in regions of the CNS induced by ketamine. Electroencephalogram also showed improvement of alertness after Gouteng interaction with ketamine. Gouteng could also affect the levels of neurotransmitters in the ketamine treated brain. Simultaneous treatment of Gouteng and ketamine is not significantly better than pre or post Gouteng treatment, the effects of time of treatment depend very much on the organs. On the whole, the simultaneous treatment appeared to be more desirable. In conclusion, Gouteng shows promise as an adjunct treatment on the toxicity created by ketamine. However, it is important to remember, Gouteng, like any medicine, long term usage will lead to increase of serum transaminase and creatinine levels. Proper supervision and advice by a Chinese medicine practitioner and/or a medical practitioner in Western medicine is a must for human ketamine patients.