

Studies on the Reproductive and Developmental Toxicity of Herbal Medicine Containing Aristolochic Acids

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Rapidly progressive interstitial renal fibrosis has recently been reported in young women who have been on a slimming regimen including chinese herbs. Aristolochic acid, suspected as the causal factor of this renal disease, is a well known carcinogen. It has been known that Madouling (*Aristolochiae fructus*) contains aristolochic acid. The objective of this study was to investigate the effects of Madouling, Madouling-tang, which are the extract mixture from 10 different chinese herbs including Madouling, and aristolochic acid on reproductive and developmental toxicity. Female rats were administered orally with the extracts of Madouling, madouling-tang, and aristolochic acid from 14 days before mating to day 17 of gestation. Madouling (8mg/kg) decreased fertility in the 8mg/kg group, but Madouling-tang and aristolochic acids did not. Significant decrease of mean fetal body weights were observed in the 16mg/kg group of aristolochic acids. External, visceral and skeletal malformation of fetuses were not observed with treatment. Histopathological examination showed the discrete damage of kidney in the 8mg/kg group of Madouling and 16mg/kg groups of aristolochic acid. In whole embryo culture, Madouling and Madouling-tang caused the retardation of growth and development of embryo in the dose of 1 μ g/ml and 0.02 μ g/kg, respectively while aristolochic acids showed the similar effect in the dose of 300 μ g/kg. These results indicate that Madouling, up to 0.05mg/kg (prescription dose to human) has no adverse effects on the fertility, reproduction and development of Sprague-Dawley rats.

Key words) *Aristolochic acid, Madouling (Aristolochiae fructus), fertility, reproductive toxicity, development*