Pharmacokinetic Study of Lobeline in Rats
After Intravenous and Oral Administration

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SUMMARY. Lobeline is a natural alkaloid found in “Indian tobacco” (Lobelia inflata), “Devil’s tobacco” (L. tupa), “cardinal flower” (L. cardinalis), “great lobelia” (L. siphilitica), and Hippobroma longiflora. However, there have been few detailed pharmacokinetic studies about lobeline on animals. The aim was to investigate the pharmacokinetic characteristics of lobeline in rats, to whom were given intravenous and oral of single doses of lobeline injection. The concentration levels of lobeline in plasma were determined with LC-MS. Various pharmacokinetic parameters were estimated from the plasma concentration versus time data using non-compartmental methods. The $C_{\text{max}}$ values were 464.8 ± 100.6, 1766.3 ± 283.6 and 4448.8 ± 1172.2 ng/mL after the intravenous administration of single doses of 1, 5 and 10 mg of lobeline, respectively. The corresponding values of AUC$_{0-6h}$ were 647.5 ± 150.2, 3194.3 ± 436.0, and 7370.0 ± 1058.1 ng/(mL/h), and the values of $t_{1/2}$ were 1.81 ± 0.66, 1.78 ± 0.44, and 2.24 ± 0.84 h. The results showed that $C_{\text{max}}$ and AUC$_{0-6h}$ were both linearly related to dose. The absolute bioavailability was 13.8%.

KEY WORDS: LC-MS, Lobeline, Pharmacokinetic.

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