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Non-compartmental pharmacokinetics modeling of amlodipine in rats

Bijay Aryal
Chitwan Medical College, India

In the present study, we did the non-compartmental pharmacokinetics study of amlodipine using high performance liquid chromatography with ultraviolet detector (HPLC-UV) in Wistar rats. Rats were allocated to two groups; intravenous group (IV study n=6) and oral group (PO study n=6).In both groups, surgical procedures were carried out under ketamine HCL (40 mg/kg) and diazepam (1.5 mg/kg) general anesthesia (intramuscular injection). The blood samples were collected at different time intervals and were analyzed using HPLC-UV system. Results showed that amlodipine had a short terminal half-life with relatively high distribution volumes during the steady and terminal phases, and with low plasma clearance. Furthermore, the availability ratio of amlodipine through the intravenous route was higher than that through the oral route, indicating that first pass metabolism and hepatic blood flow are important factor of drug elimination of amlodipine. Bioavailability was estimated to be 78.60±21.33 % based on the AUCinf ratios of oral and intravenous administration.

phrbijayaryal@gmail.com