PHARMACOKINETIC PARAMETERS OF TRAMADOL AND ITS O-DESMETHYL TRAMADOL METABOLITE IN POSTOPERATIVE PATIENTS

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Abstract

BACKGROUND Tramadol is a unique analgesic because of its serotonin, gamma-aminobutyric acid (GABA), norepinephrine and opioid effects, as such, it is famous as a postoperative analgesic; regrettably, it has gained notoriety as a major source of drug abuse in West Africa. Despite its licit and illicit popularity, few studies have focused on the pharmacokinetics of oral tramadol in blacks who reside in Africa. This study aimed to assess the pharmacokinetic parameters of tramadol in postoperative patients, a common drug in postoperative pain management. METHODS AND EXPERIMENTAL APPROACH After ethical clearance and informed consent, the researcher conducted time kinetics of tramadol and its metabolite on 12 postoperative patients after a single oral dose of tramadol at 100 mg. Concentrations of tramadol and its O-desmethyl tramadol metabolite were assayed using HPLC (UV detection) after liquid-liquid extraction. The internal standard used was phenacetin. RESULTS None of the patients experienced severe adverse effects. Data on validation, robustness, linearity, precision and accuracy for tramadol and O-desmethyl tramadol were within acceptable limits. Maximum plasma concentration (Cmax), half-life, and time to reach Cmax for tramadol and its metabolite were found to be 5.11 ± 2.95 and 4.68 ± 2.9 mg/L; 9.17 ± 6.94 and 5.75 ± 4.52 hours; 4.71 ± 3.77 and 3.38 ± 2.13 hours respectively. CONCLUSIONS The findings in this study were higher than the therapeutic level described in previous studies reviewed without any acute adverse severe effect, further studies are needed in the studied population to verify these findings.

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