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Pharmacokinetics, dosage regimen and *in vitro* plasma protein binding of Danofloxacin following intravenous administration in adult buffaloes

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The present study was aimed to investigate the pharmacokinetics behavior and optimal dosage regimen of danofloxacin in 8 adult healthy buffaloes of local breed (Nili Ravi) following single intravenous administration at the dose of 2.5 mg/kg body weight. Plasma drug concentrations at various time intervals were measured by HPLC method. *In vitro* plasma protein binding was determined employing the ultra filtration technique. The distribution and elimination of danofloxacin was rapid, as indicated by the values (Mean±SD) of distribution half-life ($t_{1/2\alpha} = 0.25 \pm 0.09$ hours) and elimination half life ($t_{1/2\beta} = 3.26 \pm 0.43$ hours), respectively. Volume of distribution at steady state (V_{ss}) was 1.14 ± 0.12 L/kg, displaying its extensive distribution into various body fluids and tissues. The high value of AUC (9.80 ± 2.14 µg/ml.hr) reflected the vast area of the body covered by drug concentration. The mean residence time was noted to be 4.78 ± 0.52 hours. On the basis of pharmacokinetic parameters, a suitable intravenous regimen for danofloxacin in adult buffaloes would be 6.5 mg/kg to be repeated after 12 hours intervals. The present study is the foremost pharmacokinetic study of danofloxacin in the local species which would provide the valuable contribution in the local manufacturing of danofloxacin in Pakistan in the future.

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Cancer chemotherapy induced adverse drug reactions

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Background: Cancer chemotherapeutic drugs are associated with several adverse drug reactions. Thus, the present study was done to determine the prevalence of adverse events in patients treated with chemotherapy.

Methods: Spontaneous ADR reports of patients on antineoplastic drugs were studied. These reports were analyzed for various carcinomas under treatment, medications used, types of ADRs, organ system involvement, severity, causality assessment and preventability.

Results: Over a period of 2 years a total 591 cases were received. The prevalence of ADRs was more in female patients as compared to men. ADRs mostly occurred in the age group of 41-50 years (27.4%). Cisplatin (19.6%) was found to be the most common drug. The commonest ADR reported was nausea and vomiting. Gastroenterology (40.1%) was the most affected system. 12.9% ADRs were considered serious. Causality assessment revealed that 80% of the ADRs were possible. 86.97% cases were found to be mild and 51% were not preventable.

Conclusion: Pharmacovigilance of these drugs needs to be explored and use of preventive measures needs to be enhanced in order to reduce the incidence and severity of ADRs.

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