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Comparative bioavailability of different formulations of florfenicol injection solution marketed in Iran

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Florfenicol is a broad-spectrum with a range of activity similar to that of chloramphenicol; however does not carry the risk of including human aplastic anemia which is associated with chloramphenicol. Florfenicol has been demonstrated to be active in vitro and in vivo against *Mannheimia (Pasteurella) haemolytica*, *Pasteurella multocida* and *Haemophilus somnus*. Different brands of florfenicol are marketed in Iran and it is believed that the differences in product formulation may affect the therapeutic response by altering relative bioavailability of the commercial formulation. Therefore the present study was carried out to study the bioavailability of F-nex 300 (Razak Pharm. Co.) in comparison of Noflor 30% (Schering -Plough) injection solution. 12 calves 3-3.5 month, weighted 83-175kg, were included in this study. 20mg/kg of either product was administrated in random cross over manner to each animal in two different days with wash out period of two weeks. Blood samples (10 ml) were taken from jugular vein in heparinized tubes at 0, 1, 1.5, 2, 2.5, 3, 3.5, 4, 6, 8, 24 and 48hr. After drug administration. The concentrations of felorfenicol in plasma were determined by an HPLC method. The standard kinetic parameters C_{max} , T_{max} and Area Under the Concentration curve (AUC) were calculated and compared (ANOVA) using computer program . They are as follows: - On average of 4.04 +/- 0.62 hr after administration of 20mg/kg of Noflor and 3.12 +/- 0.35 hr after administration of F-nex, maximum blood levels are reached. - C_{max} as well as T_{max} values for two products are comparable (2.12 +/- 0.17 μ g/ml for Noflor and 2.26 +/- 0.23 μ g/ml for F-nex). - AUC values are an indication of the amount of the drug absorbed into the systemic circulation. AUC(0-48) for Noflor is 52.72 +/- 4.78 and for F-nex is 52.32 +/- 6.37 μ g/ml.hr. No statistically significant difference was found between these two formulations. Our data indicates that the bioavailability of F-nex 300 (Razak Co.) is similar with Noflor 30% injection solution, therefore they are interchangeable.

Keywords: Florfenicol, Bioavailability, Pharmacokinetic, HPLC