



Comparative bioavailability of different formulations of tilmicosin oral solution marketed in Iran

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Abstract

Tilmicosin is a macrolide antibiotic which is synthetically derived from tylosin. It is particularly potent against *Pasteurella haemolytica*, *Pasteurella multocida*. It also has a significant antimicrobial effect on mycoplasma spp. Different brands of tilmicosin are marketed in one country 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 bioavailabilities of different oral solutions of tilmicosin formulated in Iranian companies [Pulmogen phosphate 25% (Laluk) – Farmotil 25% (Farsavand)] in comparison of pulmotil 25% (Elanco). 15 healthy layer chickens 336-350 day old, weighted 2.16 ± 0.08 kg, were included in this study. 50 mg/kg of either product was orally administrated in a random cross over manner to each animal in three different days with wash out period of three weeks. Blood samples (1 ml) were taken from radial vein in heparinized tubes at 0, 1, 1.5, 3, 4.5, 6, 8, 24, 48 and 72hr post- drug administration. The concentrations of tilmicosin 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 and listed in the following table. (The concentration of tilmicosin for two last points – 48 and 72hr.- fell bellow the LOQ, so the pharmacokinetic analysis was on the end of 24hr.)

	Pulmotil 25%	Farmotil 25%	Pulmogen 25%
C_{max} (µg/ml)	1374.9 ± 164.87	1149.24 ± 82.59	1318.53 ± 172.18
T_{max} (hr.)	3.7 ± 0.32	3.3 ± 0.26	3.56 ± 0.27
AUC ₍₀₋₂₄₎ (µg.hr/ml)	11301.23 ± 1302.22	10689.9 ± 886.46	9726.737 ± 1295.91

No statistically significant difference was found between different formulations.

Our data indicates that the bioavailability of tilmicosin is similar in different formulation used in this study therefore they are interchangeable.

Keyword: tilmicosin, Bioavailability, Pharmacokinetic, HPLC.