Pharmacokinetics of triamcinolone acetonide after a single intravenous dose in sheep

Students:
Mazen Ali
Abdul Fattah Turshan
Abeer Qady

Supervisor :
Dr. Ramzi Shawahna

Abstract:

Background: Triamcinolone acetonide (TA) is a synthetic intermediate-acting glucocorticoid corticosteroid that is 5 folds as potent as hydrocortisone. TA exhibits distinguished anti-inflammatory action. TA is one of the most frequently use glucocorticoid corticosteroid for different inflammatory conditions. The aim of this study was to describe the pharmacokinetics of TA after a single intravenous dose in a group of mixed-race sheep.

Methods: Four female adult sheep aged between 1 and 3 years were used in this study. TA was dissolved into dimethyl sulfoxide and each sheep was injected (0.04 mg/kg) into the contralateral non-catheterized jugular vein. Blood samples (about 5 mL) were collected at 5 min before administration, 0 min, 5 min, 15 min, 30 min, 45 min, 1 h, 2 h, 3 h, 4 h, 6 h, and 24 h after the dose was administrated from each sheep. Blood samples were allowed to stand and plasma was obtained after centrifugation at 2500 g for 15 min. Plasma samples were stored at - 20 º C until the time of analysis.

Results: In this study, we estimated the pharmacokinetic parameters of TA after a single intravenous dose (0.04 mg/kg) in a group of sheep. The initial drug back extrapolated initial concentration (C0) was 0.42 μg/mL. The half-life (t1/2) was 2.77 h.

Conclusion: Pharmacokinetic parameters of TA were determined after a single intravenous dose (0.04 mg/kg) in sheep. Sheep might offer an alternative animal model to study the pharmacokinetics of drugs.