Original Research

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Effect of Poloxamer 407 on serum VLDL, LDL and HDL levels of rabbits

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Abstract
Background: Poloxamer 407 is used in parenteral formulations as solubilizing and wetting agent for traditional, low-molecular-weight organic drug molecules and as stabilizing agent for proteins and polypeptide drugs. It has very high promising value in the medicine field, but has held responsible for changes in the lipid parameters. Thus, effect of poloxamer 407 on the rabbit’s serum very low density lipoprotein (VLDL), low-density lipoprotein (LDL), and high-density lipoprotein (HDL) levels was studied after being injected intravenously.

Aims & Objective: To study the effect of poloxamer 407 on rabbit’s serum VLDL, LDL, and HDL levels following intravenous injection.

Materials and Methods: Pretreatment, baseline readings were recorded. Rabbits were injected with 5.5, 27.5, and 137.5 mg/kg of poloxamer 407, and the effects on blood chemistry were assessed on the 2nd, 4th, and 7th day. The results of the study were expressed as mean ± SEM, and data were analyzed using one-way analysis of variance test. Values with P < 0.05 were considered as significant.

Results: The highest dose of poloxamer 407 (137.5 mg/kg) significantly increased serum VLDL and decreased HDL level in rabbits, with the maximum increase observed on the 2nd day after injection. All the doses given did not alter the serum LDL level. The lower doses of poloxamer 407 did not alter serum VLDL, LDL, and HDL levels.

Conclusion: Our results showed that poloxamer 407 in higher doses significantly increased serum VLDL and decreased HDL levels but in lower doses did not show any adverse effect on the lipid biochemistry. But we recommend further studies to know the effect of this poloxamer on chronic use and through different route of administration.

Key words: Poloxamer 407; Very Low Density Lipoprotein; Low-Density Lipoprotein; High-Density Lipoprotein; Rabbit
REFERENCES


