Again, By Mouth is Better

The sulfonylurea compound glipizide is used orally in humans and cats to treat hyperglycemia. Glipizide increases insulin release from pancreatic b-cells and helps the body use insulin efficiently. This study was conducted to evaluate plasma glipizide concentration and its relationship to plasma glucose and serum insulin concentration in healthy cats given glipizide orally or transdermally. Cats were treated with 5 mg glipizide orally or transdermally in the inner pinna. Control cats received a capsule containing inert ingredients or gel with inert ingredients. Blood samples were collected before dosing and at several intervals thereafter. Glipizide was detected in all treated cats at some point during testing. Cats treated orally had significantly higher peak concentrations that were reached more quickly than transdermally treated cats. All treated cats also had significantly decreased mean plasma glucose concentrations than control cats. Cats treated orally had a faster and greater decrease in glucose concentration than cats treated transdermally. Mean plasma glucose concentrations were similar between the treatment groups after 6 hours. None of the cats had a significant change in serum insulin concentrations. Much variability in glipizide levels was noted in transdermally treated cats, suggesting an incomplete, inconsistent, and delayed absorption in transdermal delivery compared with oral administration. Longterm studies are needed to determine whether transdermal application of glipizide is feasible for treating diabetes mellitus in cats.

COMMENTARY: The search is always on to provide a more convenient method of dosing cats and thereby increasing client compliance. This is especially important in chronic conditions. It has been hoped that transdermal gels would be the answer. However, as the authors point out, all the various drugs that have been tried in pluronic lecithin organogels have shown the same results—absorption that is incomplete, nonexistent, or inconsistent. This latest study, in which glipizide was administered either transdermally or orally, leaves us with very much the same results. At present, despite the allure of an easy way to administer medication, transdermal gels cannot be recommended for clinical use.—Katherine S. Gloyd, DVM