Transdermal Amlodipine: Worth a Try

Oral amlodipine, given once daily, is an effective antihypertensive agent in cats. However, oral administration can be problematic for cat owners. Transdermal drug delivery systems have not been well studied in cats. This pilot study evaluated transdermal amlodipine in 6 cats. Each was started on an oral suspension of amlodipine at 0.625 mg once daily, which was titrated upward as needed until a systolic pressure $\leq$ 180 mm Hg was achieved. The final dose was maintained for 7 days, after which the cats were switched to transdermal amlodipine ointment at the same dose applied to the inner pinna once daily. Median systolic blood pressure before treatment was 242.5 mm Hg (range, 192–300 mm Hg). After 7 days of oral amlodipine, blood pressure dropped by a median of 73.5 mm Hg. This increased by a median of 20 mm Hg when the cats were switched to transdermal amlodipine. While the degree of blood pressure reduction maintained was less than that for the oral form, it was still clinically important, even in cats that did not remain in the normotensive range. Further studies to determine dosing, pharmacokinetics, and efficacy are needed.

COMMENTARY: The bioavailability of amlodipine in this study, as found with other transdermal drug preparations, was lower than that of the oral form. The clinical response to transdermal amlodipine, however, was still clinically significant—a result that has also been seen with other transdermal drugs. The cause of the decreased bioavailability of these preparations is not known but is generally believed to result from dermal metabolism and/or diminished transdermal penetration. Still, the data here suggest feline hypertension can be clinically controlled with transdermal amlodipine. Further studies may help to elucidate the best way in which to dose these cats—whether it is a higher concentration than the oral form, more frequent dosing, or some other modification to the currently recommended oral regimen.—*Jennifer L. Schori, VMD*

Treatment of feline hypertension with transdermal amlodipine: A pilot study. Helms SR. ***JAAHA*** 43:149-156, 2007.