Home Monitoring of Blood Glucose in Diabetic Patients

Blood glucose curves (BGCs) in diabetic patients are essential for evaluating time and duration of insulin effects, the nadir and extent of fluctuations in blood glucose, and identification of the Somogyi phenomenon. Cats, however, are particularly sensitive to the stress of hospitalization and veterinary handling, and this can significantly influence blood glucose concentration. Self-monitoring of blood glucose concentrations using a portable glucose meter (PGM) has been done in humans for years, and methods for capillary blood sampling in pets have been described. One of these, the “Vaculance” method, has been successful in dogs and cats. Home monitoring for cat owners can be challenging; therefore, minimizing technical difficulties is important. Of the PGMs on the market, the authors found the Glucometer Elite, renamed Ascensia Elite (Bayer Diagnostics) to be the easiest to operate, and values obtained with this PGM were accurate within clinically acceptable zones. In deciding to start home monitoring, veterinarians must assess whether an owner is psychologically prepared for it. The most frequently encountered problems at home include restraint of the cat, insufficient generation of blood volume due to mishandling of the lancing device, and failure to fill the test strip. Thus, it is necessary to emphasize and clarify these aspects of the procedure during discussion and demonstration of the technique with owners. Owner access to veterinary support is important, as are periodic patient reevaluations and assessment of the owner’s ability to perform the procedure. According to the authors, the frequency of reevaluations was not significantly different between cats managed with home monitoring and those managed without. Once owners become familiar with the technique, long-term compliance is shown and frequent generation of BGCs can be performed. Preliminary data show that home-monitored diabetic cats may have better glycemic control than those managed without home monitoring.

COMMENTARY: A 2004 position statement by the American Diabetes Association recommended self-monitoring of blood glucose as an integral part of diabetes therapy in humans. While relatively new in veterinary medicine, at-home monitoring seems equally promising. In this article, such monitoring of the diabetic cat is reviewed, including a discussion of PGMs, a stepwise approach to starting and continuing at-home monitoring, and potential problems. The authors cite a number of studies that help illustrate their points. This is a good article for anyone considering home monitoring of their feline diabetic patients and provides useful guidelines for continuing such monitoring in practices in which it is already employed.—Jennifer L. Schori, VMD