Ketones in Dehydrated Diabetics

Patients with diabetic ketoacidosis may be dehydrated when they present to the clinic, making it difficult to obtain urine for ketone testing. The purpose of this study was to determine whether plasma from a heparinized hematocrit tube would yield accurate urine ketone results (positive or negative) in diabetic cats and dogs.

Paired serum and urine samples were taken from 37 dogs and 43 cats with a known history of diabetes or hyperglycemia. Both plasma from heparinized hematocrit tubes and urine were tested on urine reagent strips (Multistix 10 SG urine reagent strips—Bayer Corporation, Elkhart, IN) for the determination of ketones. Twenty-two dogs had positive plasma and urine samples. Fourteen dogs had negative plasma and urine samples. One dog had a negative plasma sample and a positive urine sample. Twentyfive cats had positive plasma and urine samples. Fifteen cats had negative plasma and urine samples. Three cats had positive plasma and negative urine samples.

In this study, a positive plasma sample in dogs was always a true positive; in cats, a negative plasma sample was always a true negative. There are several theories why false-positive and false-negative results occurred; however, this study indicates that plasma from hematocrit tubes can be clinically useful for detecting ketonuria. Most clinics have urine dipsticks readily available and could perform these tests rapidly.

Evaluating the use of plasma hematocrit samples to detect ketones utilizing urine dipstick colorimetric methodology in diabetic dogs and cats. Brady MA, Dennis JS, Wagner-Mann C. J VET EMERG CRIT CARE 13:1-6, 2003.