

Title:

Real-time continuous interstitial glucose monitoring in neonatal South American camelids

Investigators:

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Study description:

Many sick crias lose the ability to maintain a normal blood sugar (glucose) concentration. Low blood glucose can cause lethargy, weakness, and seizures. To ensure that the blood glucose concentration remains within normal limits, repeated blood sampling is often required. However, because crias have a small blood volume, the number of samples that can be safely collected in a day is limited. To reduce the number of blood samples required, we are studying a system that continuously measures the glucose concentration in the fluid under the skin (called interstitial fluid) using a small sensor that is inserted through the skin. These Continuous Glucose Monitoring Systems (**CGMS**) are frequently used in humans, cats, and dogs, and have also been used in horses and cattle. However, more experience is needed to evaluate this system in sick crias.

Any sick cria at less than 4 weeks of age admitted to UGA's teaching hospital and having owner consent may be enrolled in the study. An interstitial sensor will be inserted into the skin on the side of the chest and secured in place with tape, skin adhesive, and sutures. The sensor is connected to a small transmitter which sends glucose data to a remote data recorder. A small blood sample will be taken approximately every 6 hours to allow comparison of glucose levels reported by the CGMS with those measured with more traditional glucose monitors. A maximum of 11 mL (approx 2 teaspoons) of blood will be collected for this study. The study will pay for the cost of the interstitial glucose sensor and blood glucose measurements.

Duration of study:

The study is ongoing and will continue until approximately 10 crias are enrolled.

Potential benefits to veterinary medicine:

This study may improve management of sick crias by facilitating more accurate and detailed glucose monitoring while limiting the amount of blood needed to measure blood glucose. Use of the monitoring system may improve our ability to recognize dangerously low or high glucose concentrations in crias.