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SUPPLEMENT: A FIELD TRIAL OF 2 POINT OF CARE **GLUCOMETERS IN HEALTHY CALVES**

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A FIELD TRIAL OF 2 POINT OF CARE GLUCOMETERS IN HEALTHY CALVES

(Your glucometer could be misdiagnosing your patient)

Joe Smith^{1,5}, Lisa Ebner², Haley Cremerius³, Channing Cantrell³, Windy Soto-Gonzalez⁴, Rebecca Rahn⁴, Jon P. Mochel⁵, Jeff Olivarez⁵, Amanda Kreuder⁶

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Introduction: Point of Care in Vet Med

 Point of care (POC) devices are becoming more utilized in veterinary medicine

- One area that has specifically benefitted from POC devices is ambulatory food animal practice
 - Rapid results
 - Lower cost

Introduction: Our Predicament...

- At the author's institutions, glucometers and glucometer supplies are commonly purchased by a central supply office
 - So it is not uncommon for small animal glucometers to be most commonly purchased due to institutional supply procedures
- What does this mean for the large animal clinician when they are interpreting results performed on a small animal POC device?

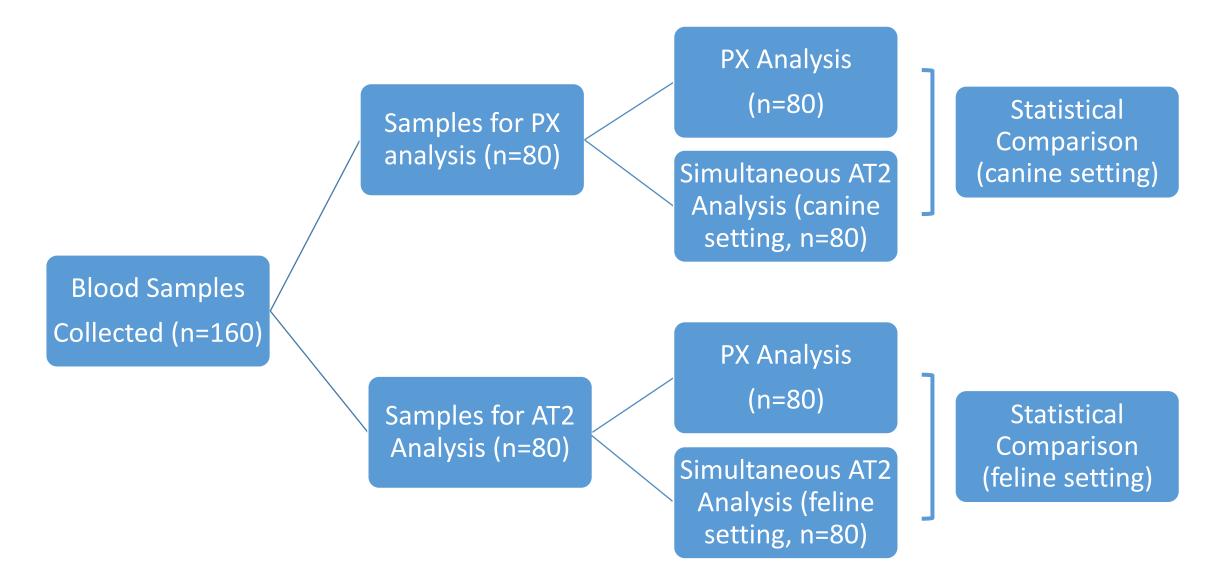
Introduction: Investigation Goals

- The goals of our investigation were to:
 - Determine the relationship between a POC glucometer validated for cattle vs a small animal POC glucometer in healthy calves
 - Using both the "Canine" and "Feline" settings of the small animal POC glucometer

Materials and Methods

- Samples were collected from 6 healthy calves
 - At various time points over a 14 day period
- Upon collection samples were immediately processed by both POC glucometers
 - Precision Xtra (PX, validated for cattle)
 - Alphatrak 2 (AT2, validated for dogs and cats)
 - Each sample was ran under either the canine or feline setting

Materials and Methods

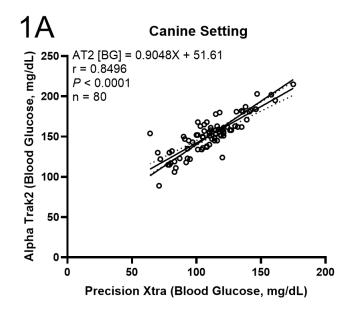


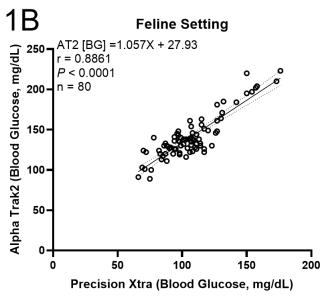
Materials and Methods

- Samples were compared as previously described
 - Linear regression
 - Bland-Altman analysis
- Commercial statistical software program
 - Prism, Graphpad Inc.

Results

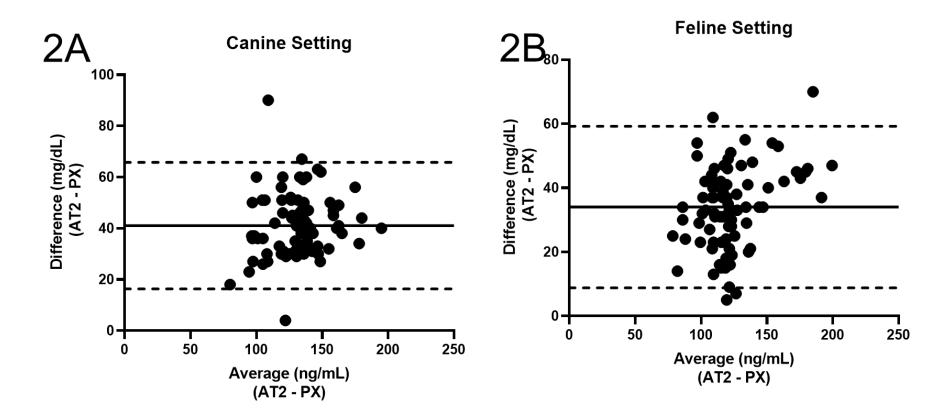
- Blood glucose concentrations ranged from 64-175 (mean ± standard deviation: 111.2 ± 22.1) and 89-215 (mean ± SD: 152.2 ± 23.6) mg/dL for the PX and AT2 (canine setting) devices respectfully
- Blood glucose concentrations ranged from 66-176 (mean ± SD 106.6 ± 23.1) and 89-223 (mean ± SD: 140.7 ± 27.6) mg/dL for the PX and AT2 (feline setting) devices respectfully
- Figures 1A and 1B demonstrate regression analysis of the comparisons





Results

• Figures 2A and 2B demonstrate Bland-Altman analysis for each setting



Discussion

• Clinicians should be aware of the AT2's ability to report an increased blood glucose concentration when compared to the PX device

 Of the AT2 settings, the feline setting appears to be closer to the PX results, although both AT2 settings demonstrate bias

Limitations and Future Directions

 Limitations include the small sample size of calves, and the use of a narrow age range of healthy calves

 More research is needed in the establishment of reference ranges for calves with the AT2 device

- Also needed is an exploration of agreement for hypo- and hyperglycemic samples from sick calves
 - More likely to be clinically important

Questions: Joe Smith, jsmit604@utk.edu

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