Method-comparison studies in animal medicine

Preliminary reference intervals for serum aldosterone concentrations in intact and neutered ferrets

Point-of-Care Blood Gases, Electrolytes, Chemistry, Hemoglobin, and Hematocrit Measurement in Venous Samples from Pet Rabbits

Evaluation of point-of-care analyzers for blood gas and clinical chemistry in Hermann's tortoises (Testudo hermanni)

Reference values for hematology and plasma biochemistry variables, and protein electrophoresis of healthy Hermann's tortoises

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Point-of-care (POC) analyzers are used in human and veterinary hospitals due to their versatility and may be especially suited for field evaluation of wildlife. The purpose of the present study was to assess the agreement between two point-of-care (POC) analyzers and a reference chemical analyzer (Stat Profile Critical Care Xpress 12, Nova Biomedical Corporation) and a reference gas analyzer (i-STAT 1, Abaxis) for blood gas profiles of Hermann's tortoises. Forty-seven Hermann's tortoises were included in the study, 24 underwent paired analysis with a portable chemical analyzer (VetScan VS2, Abaxis) and with a reference chemical analyzer (Olympus AU400, Olympus). Agreement was assessed with the Bland-Altman approach and with Passing-Bablok regression. Both POC analyzers had wide limits of agreement for most analytes, which may result in misinterpretation of test results. The small amount of blood required may result in misinterpretation of test results. We observed that the precision finding that bromocresol green dye binding method for determination of albumin in this species is not appropriate for tortoises, although it is widely used in amphibians. Although the use of POC analyzers in tortoises is intriguing due to the versatility of the instruments and the small amount of blood required, the present study confirms that interchangeability of results between POC and laboratory analyzers may be limited and specific corrective methods for POC analyzers are required.