

van Zeeland YRA, Wilde A, Bosman IH, et al

Non-invasive blood pressure measurement in ferrets (*Mustela putorius furo*) using high definition oscillometry

The Veterinary Journal 2017; **228**: 53-62

Abstract

This study was conducted to validate the use of high definition oscillometry (HDO) for non-invasive blood pressure (NIBP) measurements in ferrets and to establish reference ranges for NIBP in minimally sedated, healthy, young adult ferrets (<4 years of age). The bias, limits of agreement and correlation for HDO compared to direct arterial blood pressure (DABP) measurement were established in 14 anaesthetised ferrets. Measurements were performed at the forelimb, hind limb and tail under hypo- (<110 mmHg), normo- (110–170 mmHg) and hypertensive (>170 mmHg) conditions. Although HDO correlated well with DABP ($r > 0.90$), it showed significant proportional bias, whereby HDO generally underestimated DABP with hyper- and normotensive conditions, and overestimated DABP with hypotensive conditions. Measurements obtained from the hind limb showed higher bias than those obtained from the tail or forelimb ($P < 0.001$). Based on the above, and for practical reasons, the tail was selected as the preferred site of cuff placement in ferrets. Subsequently, a cross-over study was performed in 10 ferrets to establish the minimum dose of butorphanol and midazolam needed to successfully obtain NIBP in 100% of cases. Using this dose (0.2 mg/kg IM, each), reference intervals for NIBP from 63 healthy, young adult ferrets were established at 95–155 mmHg (systolic), 69–109 mmHg (mean) and 51–87 mmHg (diastolic) arterial pressures.