A NEW APPROACH TO THE SAFE ANAESTHESIA OF ANTELOPES AND GAZELLES: CONSIDERATIONS OF THE INDIVIDUAL PATIENT RATHER THAN THE SPECIES BY MEANS OF A JUMPINESS INDEX AND A MATHEMATICAL FACTOR

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Each species of antelope and gazelle has its own anaesthesia recommendation with intra-species variations of dosages because of diverse individual responses to anaesthetic agents.
In this study a classification is developed to dose anaesthetics for darted immobilisation of each individual regardless of the species: First, the jumpiness index (JI) from grade 1 to grade 5, which describes the animal's excitement and flight-behaviour. Second, the shoulder height [cm] – body weight [kg] – quotient (SH-BW) by estimated data, which describes the animal's shape.
In total, 50 anaesthetic protocols of 16 species of captive antelopes and gazelles in the Serengeti-Park Hodenhagen (04/2013 to 02/2014) were analysed. Anaesthetics were combinations of α2-agonists medetomidine, detomidine, xylazine and opioids butorphanol, etorphine with acepromazine, and ketamine. Reversing drugs were atipamezol, naloxone and diprenorphine.
Xylazine combinations worked best for animals with JI 1-2 and every SH-BW. Etorphine combinations were best for those with JI 4-5 and SH-BW ≤ 0.6. Medetomidine combinations were usable for all JI grades, but best for JI 3-5 animals with 0.06 mg/kg (JI 3) to 0.36 mg/kg (JI 5) in average. Ketamine was used from 2.3 mg/kg (JI 2) to 5.3 mg/kg (JI 5) in average. Atipamezole reversed the α2-agonists with a mean dosage from 0.2 mg/kg (SH-BW < 1) to 0.9 mg/kg (SH-BW > 1.5) It was administered 1:2 (IV:IM), because recovery time is ≤ 5min without re-narcotisation.
Including further cases it should become possible to calculate whole individual anaesthetic protocols. To verify objectivity of this classification colleagues are invited to test this.