Introduction

African wild dogs (AWD; *Lycaon pictus*) have a complex hierarchical social structure that can lead to aggression, morbidity & mortality after temporary separation of individuals from the pack, or during new pack formations. We performed a placebo controlled double-blinded study to evaluate the effect of Dog Appeasing Pheromones (DAP) on faecal glucocorticoid (fGCM) & testosterone (fAM) metabolites, & behaviour in captive African wild dogs, after temporary pack separation, immobilisation & reintroduction.

Methods

### Behavioural observations
- Non-contact & contact dominance behaviour
- Active & passive submission
- Aggressive behaviour
- Affiliative behaviour

### Individual faecal sample collection & hormonal analysis
- Control-3-CMO (fGCM)
- T-3-CMO (fAM)

### Results

#### Faecal glucocorticoid metabolites
- Rise in placebo & DAP group (Fig. 1a).
- Ratio peak/pre-peak value ≥ 1 in 50.0 % of placebo treated animals (p=0.045).
- Ratio peak/pre-peak value ≥ 1 in 40.9 % of DAP treated animals (p=0.032).
- Ratio peak/pre-peak value > 1 in 30.8 % of placebo treated animals (p=0.059).
- Ratio peak/pre-peak value > 1 in 21.4 % of DAP treated animals (p=0.059).

#### Faecal androgen metabolites
- Rise in placebo group, absent in DAP group (Fig. 1b).
- Ratio peak/pre-peak value > 1 in 33.3 % of placebo treated animals (p=0.049).
- Ratio peak/pre-peak value > 1 in 11.1 % of DAP treated animals (p=0.049).

### Behaviour

- During reintroduction, tendency towards higher rate of contact dominance behaviour in placebo treated packs (Fig. 2a) & higher rate of non-contact dominance behaviour in DAP treated packs (Fig. 2b).
- Tendency towards higher rate active submission in placebo treated packs (Fig. 2d).
- No differences in rates of affiliative or aggressive behaviour. Aggressive behaviour during reintroduction was absent in all packs.

Discussion-Conclusion

The absence of differences in fGCM in both treatment groups might be due to immobilisation-related stress. AWDs perceive DAP which is reflected in the absence of a testosterone increase after reintroduction. Together with a trend towards a lower rate of contact dominant behaviour, this could decrease the risk of aggression. However, to explore the behavioural differences further, more research is needed with (1) a higher number of packs; or (2) AWD specific appeasing pheromones.

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