COMPARATIVE STUDY OF INHALED FLUTICASONE VERSUS ORAL PREDNISOLONE IN 25 DOGS WITH TRACHEAL COLLAPSE

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INTRODUCTION: Chronic airway inflammation is usually present in dogs with tracheal collapse (TC) and frequently determines the appearance and severity of clinical signs (CS)[1,2]. Inhaled corticosteroids may be an alternative to systemic route[1,3], allowing chronic control of airway inflammation without systemic undesirable effects[2,4]. The aim of this study was to compare the effects of inhaled versus oral corticosteroids in dogs with TC.

MATERIALS AND METHODS: A randomized, longitudinal, observational, multicentric study was designed. Inclusion criterion was the radiographic evidence of TC. CS were quantified by mean of a clinical score system as follow (Figure 1): episode of dyspnea (ED, 0: not; 1: little frequent; 2: very frequent), type of cough (TyC,1: isolated; 3: paroxismal), cough frequency (CF, 0: <5/week; 2: >5/week; 3: >1/day; 4: insidious), tracheal sensibility to palpation (0: normal; 1: moderate; 2: high; 3: hyperreactive). The sum of punctuations determined the Total Score (TS, 0 to 11). The exercise tolerance (ExT), thirst and urination frequency (UF) were also monitored (normal, increased, decreased). When TS was ≥ 5 dogs were randomized to receive *inhaled fluticasone* (100 µg/12h x 10 days, then 100 µg /24h x 5 days, then 100 µg /48h x 5 days, then 50 µg /48h x 10 days) or *oral prednisone* (0.5 mg/kg/12 h x 3 days, then 0.25 mg/kg/12 h x 5 days, then 0.25 mg/kg/24 h x 10 days, then 0.25 mg/kg/48 h x 12 days). Aerosol medication was administered by a commercial MDI system, coupled to a spacer and using a face mask (Figure 2). Owners were trained to administrate appropriately the inhaled medication. The clinical parameters ED, TyC, CF, TrS, ExT, thirst and UF were monitored in the hospital in weeks 1 and 3. CF, thirst and UF were monitored also at home in weeks 2 and 4. Data were statistically compared (Mann-Whitney, chi square, ANOVA, P<0.05).

EPISODE OF DYSPNEA		TYPE OF COUGH		COUGH FRECIENCY		TRACHEAL SENSIBILITY	
0	No	0	No cough	0	Sporadic (< 5 epidodes/ week)	0	Normal
+1	Little frequent	+1	Isolated	+2	Frequent (> 5 epidodes/week)	+1	moderate
+2	Very frequent	+3	Paroxismal	+3	Very frequent (> 1 epidodes/day)	+2	High
				+4	Insidius	+3	Hyperrreactive

Figure 1. Clinical score system used to quantify the clinical signs of dogs with tracheal collapse in this study. The sum of punctuations determined the Total Score (TS, 0 to 11).

Figure 2. Photograph of a dog taking Inhaled fluticasone. The animal was allowed to breathe in for 7 to 10 breaths in order to complete the process.

RESULTS: Twenty five dogs fulfil the criteria for inclusion, 16 were randomized to fluticasone group (FG) and 9 to prednisone group (PG). At inclusion point, no differences among groups were found for signalment and clinical parameters, showing that both study groups were homogeneous at inclusion. The separate analysis of therapy groups showed a significant improvement of all clinical parameters in both, which started generally in the second week and was maintained to the end of the study. Thirst and UF tended to increase in the PG but not in FG. The comparative analysis among therapy groups showed significantly better improvement in the clinical parameters ED and CF of dogs in FG. In the two last controls (week 3 and 4), a significantly higher percentage of dogs in the PG showed increased thirst (44.4% vs 6.3%; P=0.022) and urination frequency (44.4% vs 0%, P=0.004) respect to the FG (Figure 3).

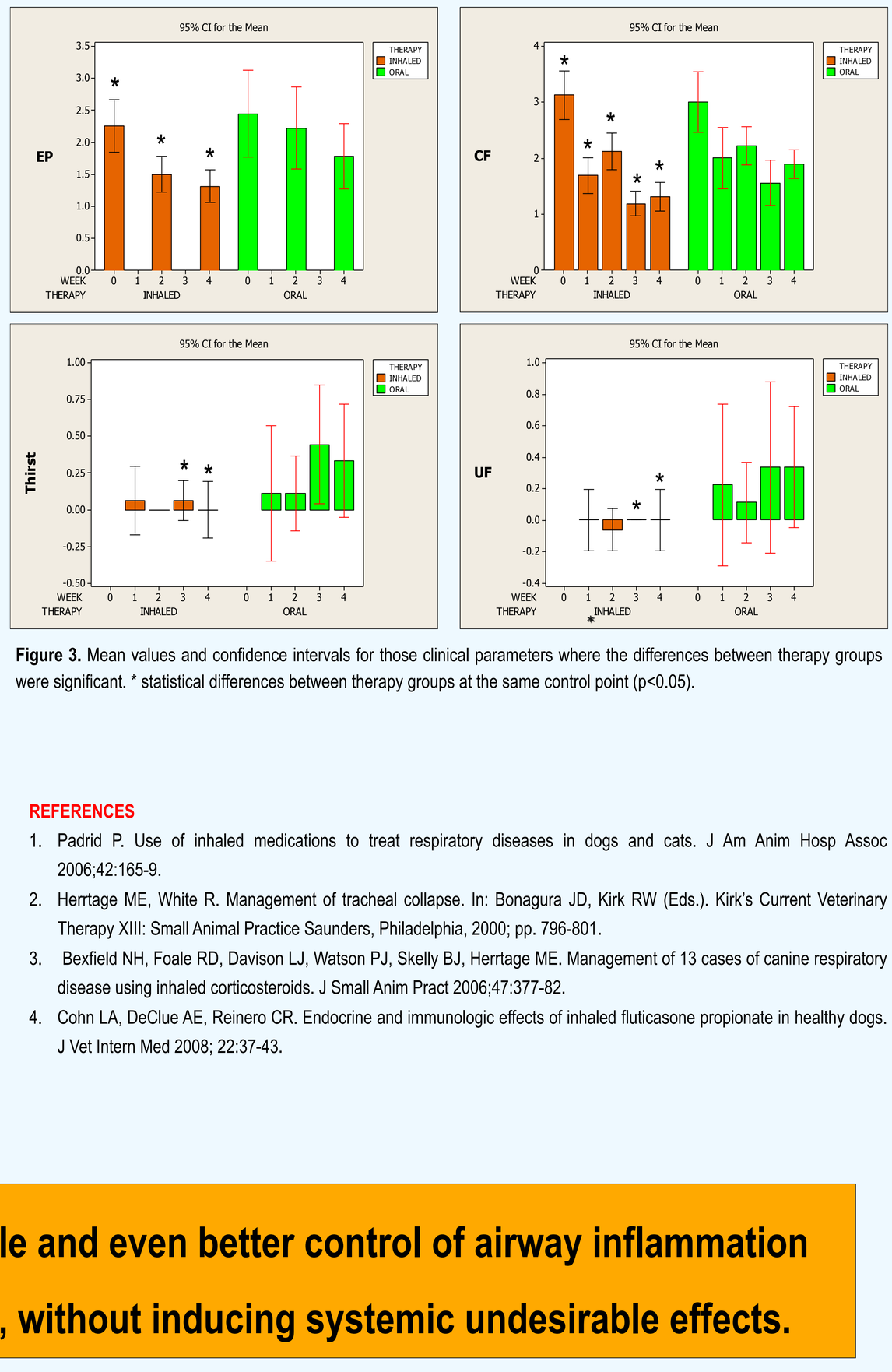

Figure 3. Mean values and confidence intervals for those clinical parameters where the differences between therapy groups were significant. * statistical differences between therapy groups at the same control point (p<0.05).

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Conclusion: inhaled fluticasone provides comparable and even better control of airway inflammation than oral prednisone in dogs with tracheal collapse, without inducing systemic undesirable effects.