



Anti-microbial and additional anti-inflammatory effects of inhaled essential oils in horses treated for IAD

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- Inflammatory airway disease (IAD) is highly prevalent in the working equine population.
- Travelling, exercise and competition alter immunity
- Equine athletes are more vulnerable to infection.
- The use of medication, including antibiotics, is strictly regulated and there is a need to find alternatives to prevent and manage risks

Objective of the study

Evaluate the antimicrobial and anti-inflammatory effect of an inhalable solution (IS) used in adjunction to inhaled therapy, in horses with IAD

Material & methods

39 competitive sport horses diagnosed with IAD and bacterial and/or fungal infection were included

Horses were randomly assigned to three groups:

All received inhaled corticosteroids (C) for 3 weeks + a specific antimicrobial (AM) for a maximum of 10 days based on tracheal wash (TW) culture results.

→ Group CAM : this was the only treatment (n=15).

→ Group EO : were inhaled with a commercially available essential oil preparation in addition (n=8)

→ Group IS (Immuno San) : were inhaled with the combination of essential oils described hereafter (n=16)

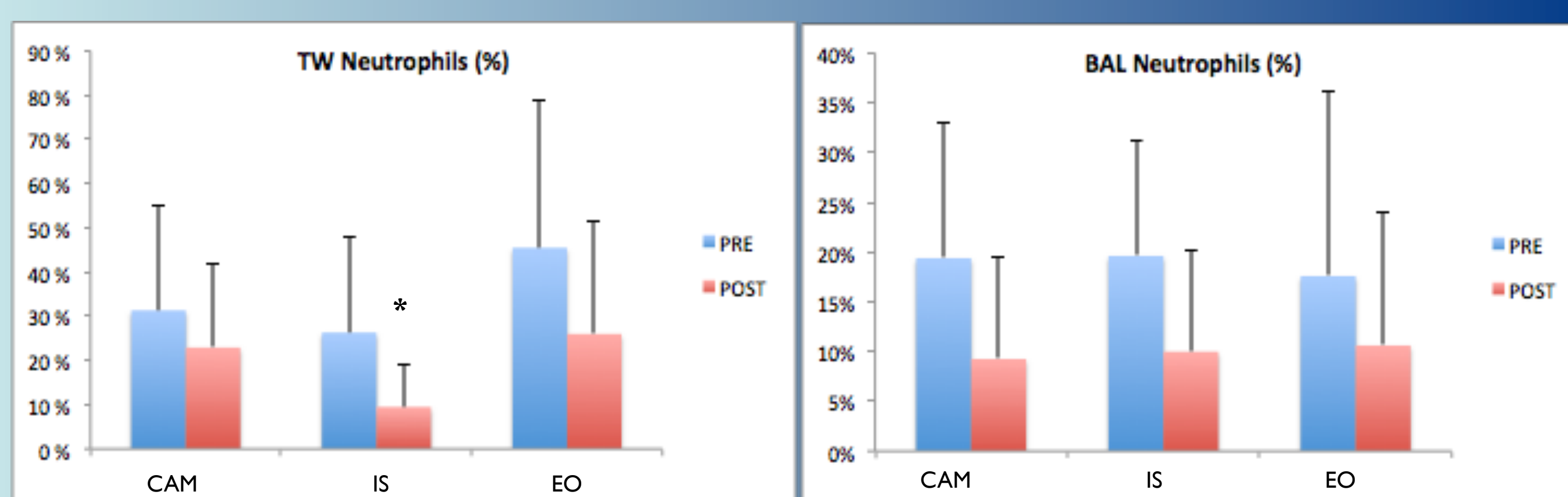
The inhaled preparations were nebulised with a Flexineb® (Nortev, Ireland) without dilution

IS composition	Antibacterial	Antifungal	Antiviral	Antioxidant	Broncho-dilator	Anti-inflammatory	Mucus clearance
Rosmarinus officinalis		+		+	+		
Eucalyptus globulus	+		+	+	+	+	+
Eucalyptus radiata	+		+		+	+	+
Melaleuca alternifolia	+	+					
Lavandula hybrida	+	+				+	
Mentha arvensis	+			+	+	+	+
Cinnamomum camphora	+	+			+	+	



Respiratory endoscopy + TW cytology, bacteriology and mycology + BAL cytology were done before and after therapy.

Comparison between inflammatory cell % in TW and BAL



* Significant decrease in TW neutrophil percentages with Immuno-San (IS) in comparison to CAM and EO treatments (Kruskal Wallis test, p=0,02)

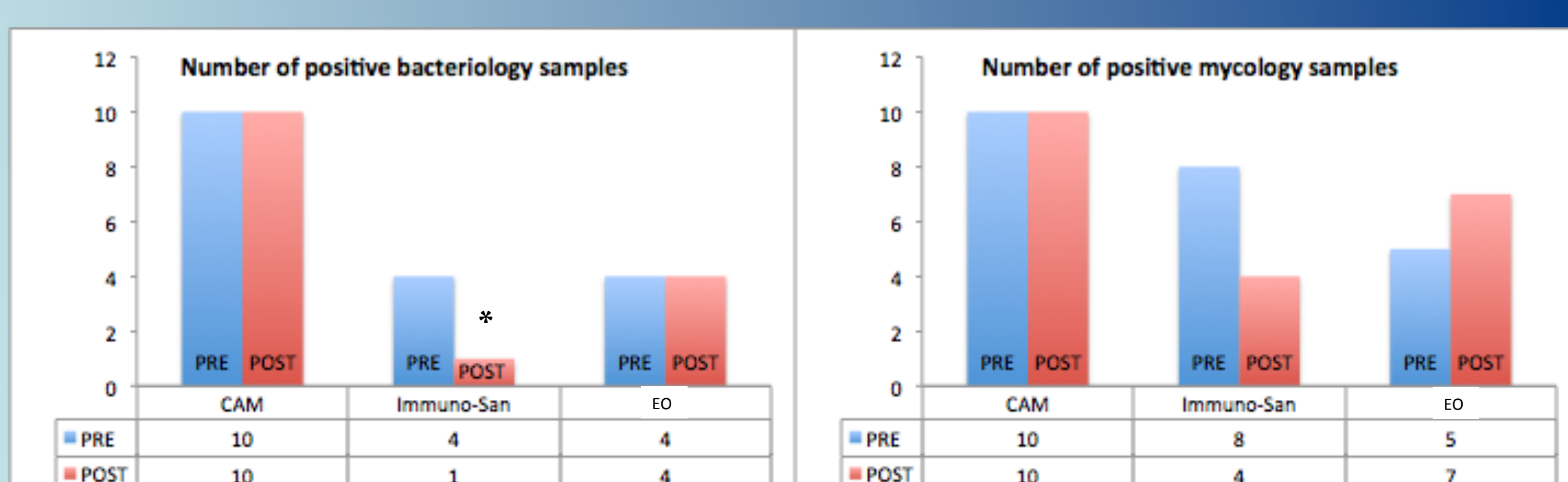
DISCUSSION

IS and EO was well tolerated by all horses

Despite initial antimicrobial therapy, inhaled corticotherapy during a 3-week period in sport horses with IAD increases the risk of secondary microbial infection in the airways.

The use of Immuno San (IS) reduced that risk whereas a commercial preparation (EO) was inefficient.

Comparison between pre and post treatment microbiology cultures



* Significantly lower positive bacterial and fungal cultures with Immuno-San (IS) in comparison to CAM and EO treatments (Chi-2 test, p=0,002 for bacteriology and p=0,007 for mycology)

CONCLUSION

Immuno San (IS) shows

- preventative anti-microbial
 - additional anti-inflammatory effects
- in competitive horses treated for IAD

IS is non doping and can be used in competition