



Evaluation of the efficacy of two intramuscular injections 24 hours apart of 30 000 I.U. of Spiramycin /kg in the treatment of experimentally induced *S. aureus* mastitis in lactating dairy cows

De Prado-Taranilla A.I¹ ; Munoz- Bielsa, J.^{1*}; Jacob S¹.; Isaka, N¹.; Ramage, C²; Reddick, D².

1 Ceva Animal Health, Libourne, France

2 Moredun Scientific, Pentlands Science Park, Bush Loan, Penicuik, Midlothian EH26 0PZ, UK



Objectives

The objective of this blinded study was to confirm the efficacy of two 30 000 I.U. /kg doses of Spiramycin by intramuscular route at 24 hour intervals in the treatment of mastitis in dairy cows following experimental infection with a recent field isolate of *Staphylococcus aureus*. The clinical efficacy was evaluated in terms of bacteriological cure rate and the non-development of *S. aureus* strains resistant to Spiramycin. The resistance threshold considered for *S. aureus* strains is a Spiramycin MIC ≥ 32 $\mu\text{g/mL}$.

Materials and methods

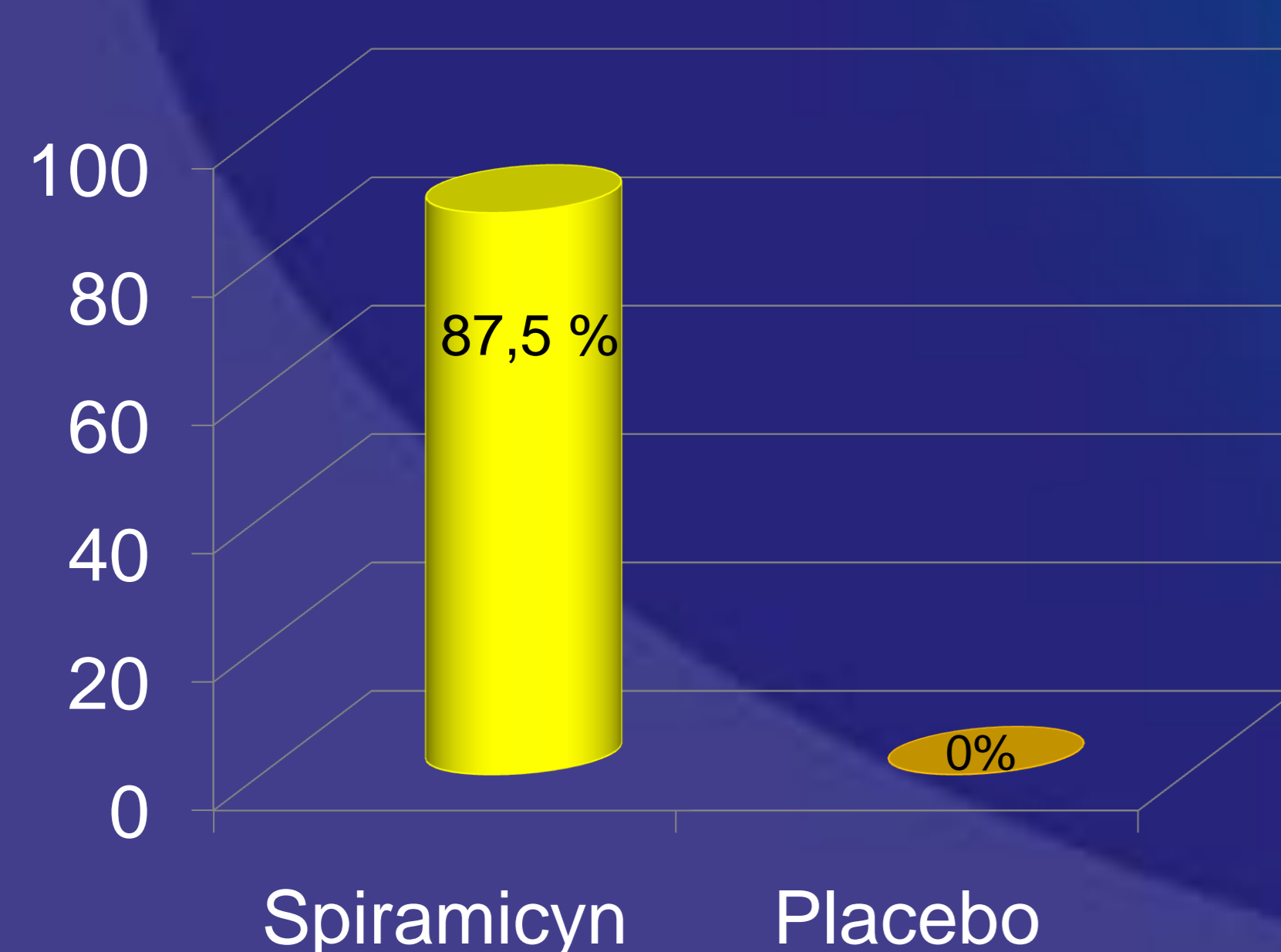
On Day 0 a total of 18 lactating cows were challenged with *S. aureus* into a single hind udder quarter (MIC= 4 $\mu\text{g/mL}$).

Animals were randomly allocated to two groups for treatment (Group 1: Placebo vs Group 2: Spiramycin) once observed to have abnormal milk samples (*i.e.*, presence of clots, blood or watery milk).

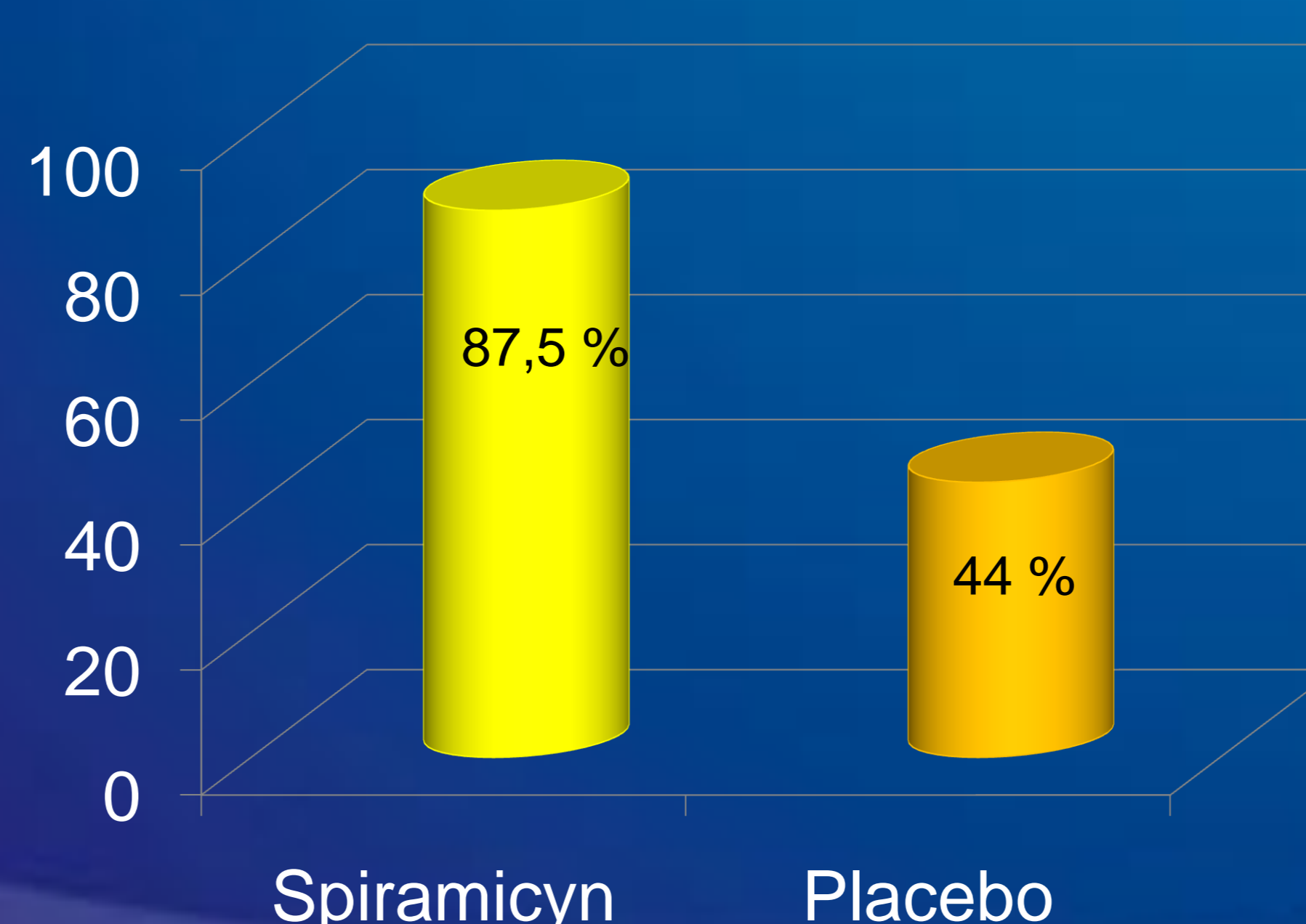
A milk sample was collected from the hind quarters of each cow for somatic cell count (SCC) and bacteriology on Day -5 and Day -4 prior to challenge on Day 0, on the first day of treatment (prior to treatment), daily for three days post first treatment and then 7 and 14 days post final treatment. The milk yield of the animals (kg) was recorded twice daily from Day -2 until 14 days post final treatment

Results

Bacteriological cure 14 days post second treatment (%)



Reduction in clinical signs at 3 days post treatment (%)



No Spiramycin resistant strains were isolated from all the animals included in the experiment

The reduction of SCC comparing placebo vs Spiramycin was 29% at day 7 and 62,16% at day 14 respectively

Conclusions

Spiramycin administered via the intramuscular at 30 000 I.U./kg (twice at a 24h of interval) is efficacious in the treatment of mastitis in dairy cows following experimental infection with a field isolate of *S. aureus*.

Spiramycin increases the bacteriological cure, provides a rapid reduction of clinical signs and has an impact of the reduction of SCC. This results in a greater milk yield at quarter level.