EFFICACY AND SAFETY UNDER FIELD CONDITIONS OF THE NEW VACCINE UBAC® AGAINST *Streptococcus uberis* INTRAMAMMARY INFECTIONS IN DAIRY COWS

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OBJECTIVES

To evaluate the efficacy and safety under field conditions of the new vaccine UBAC® (HIPRA) through a multicenter, randomized, double blinded and placebo-controlled clinical trial.

MATERIALS AND METHODS

The study was performed in six commercial dairy farms with historical records of *S. uberis* clinical mastitis (CM) and microbiologically confirmed presence of this agent at the start of the study. Healthy pregnant, heifers and cows negative to *S. uberis* were administered either UBAC® (n=401) or a Placebo (Sterile phosphate buffer solution) (n=380) following the vaccination schedule in Figure 1.

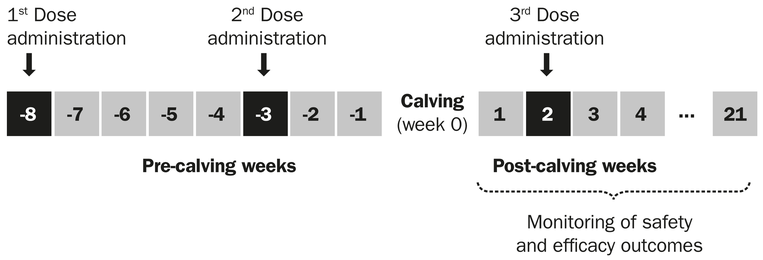

Figure 1. Scheme of the study design.

Animals were monitored up to 21 weeks after calving for incidence of CM and subclinical mastitis (ScM). Aseptic milk samples from the affected quarters were obtained for microbiological analysis of *S. uberis* (all samples) and Somatic Cell Count (SCC) (only samples from ScM). Individual milk production was recorded in five out of the six farms. Overall safety was evaluated during the whole study.

RESULTS

Incidence of animals with *S. uberis* CM was significantly lower in UBAC® group than in the Placebo group (Figure 2). More precisely, the incidence of *S. uberis* CM was reduced by 52.5%, this leading to a reduction of the number of antibiotic treatments against intramammary infections (56% less treatments in the UBAC® group than in the Placebo group).

On the other hand, differences between groups in terms of incidence of animals with *S. uberis* ScM were not statistically significant (12.3% vs 13.9%, respectively; $P=0.572$). Notwithstanding, mean SCC among milk samples from quarters with ScM was significantly lower in the UBAC® group than in the Placebo group (997 vs 3274 x10^3 cells/mL, respectively; $P=0.046$).

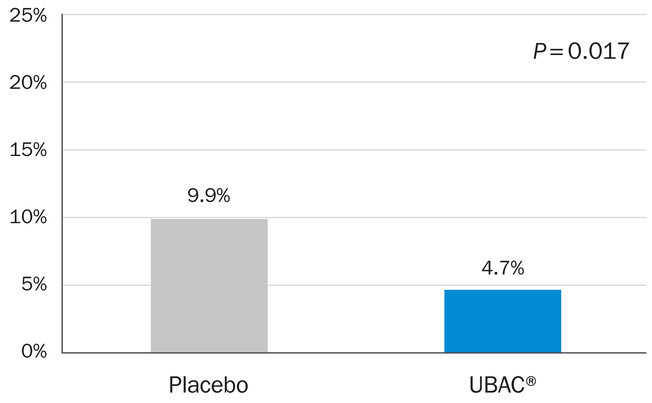

Figure 2. Incidence of animals with *S. uberis* clinical mastitis recorded in each group up to 21 weeks after calving.

In addition, mean daily milk production among animals affected by *S. uberis* ScM was significantly higher in the UBAC® group than in the Placebo group (39.3 vs 36.6 L/day, respectively; $P=0.031$). Specifically, animals in the UBAC® group produced 3.1 L/day more than animals in the Placebo group (Figure 3).

Finally, neither systemic nor clinically relevant local reactions related to the vaccine UBAC® were reported during the study.

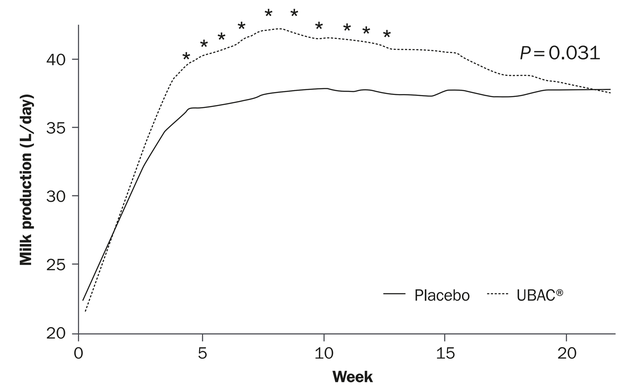

Figure 3. Mean daily milk production of animals with *S. uberis* Subclinical mastitis recorded in both groups up to 21 weeks after calving.

CONCLUSIONS

UBAC® is a safe and efficacious vaccine against *S. uberis* intramammary infections by reducing the incidence of *S. uberis* clinical mastitis as well as Somatic Cell Count in animals with *S. uberis* subclinical mastitis. In addition, vaccination with UBAC® prevents from milk production loses among animals with *S. uberis* subclinical mastitis.

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