

WBC Madrid 2022
70-80 dyrlæger og forskere fra hele verden
6.September 2022

Treatment of clinical mastitis: intramammary or in combination with parenteral administration of penicillin?

Line Svennesen, DVM, Ph.D.
University of Copenhagen

UNIVERSITY OF COPENHAGEN



line.svennesen@sund.ku.dk

STØTTET AF

Mælkeafgiftsfonden

Background

- We aim for responsible use of antibiotics!
- Mastitis takes the largest amount of antibiotics for dairy cattle (DANMAP, 2020)
- Treatment of mastitis in Denmark (Nordic countries) is more or less restricted to the use of Penicillins.
- Mainly combined treatment: Penicillins are administered local (IMM) and systemic (IM) (Wilm et al., 2021)

Purpose and objective

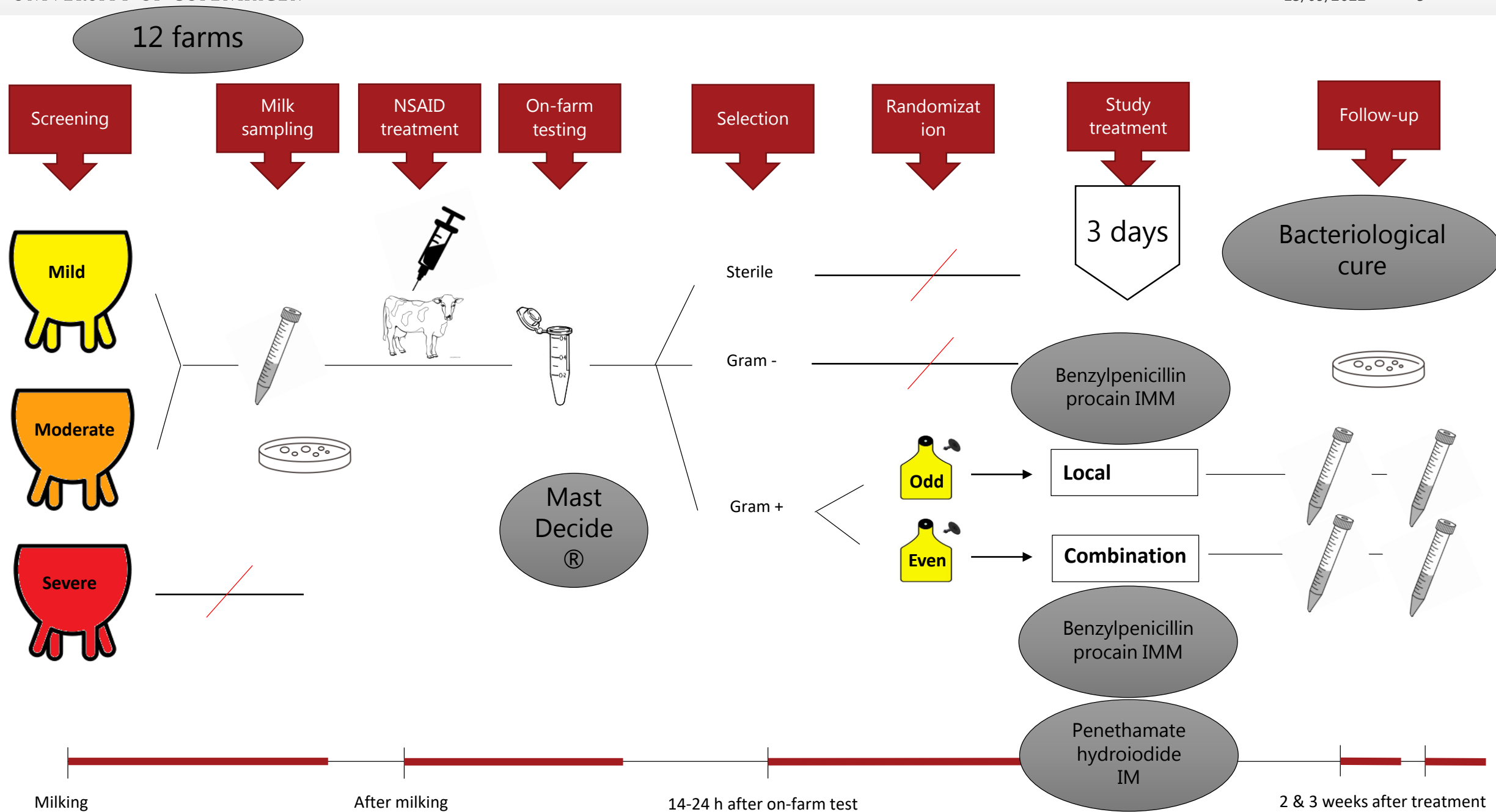
- If we treat local only, compared to combined treatment we can reduce the amount of active compound by 16 times per treatment-day
- Outcome: Bacteriological cure rate
- Non-inferiority study: 15% margin

We would like to demonstrate...

Local treatment alone does not reduce bacteriological cure rate with more than 15% compared to combined treatment



Materials and Methods



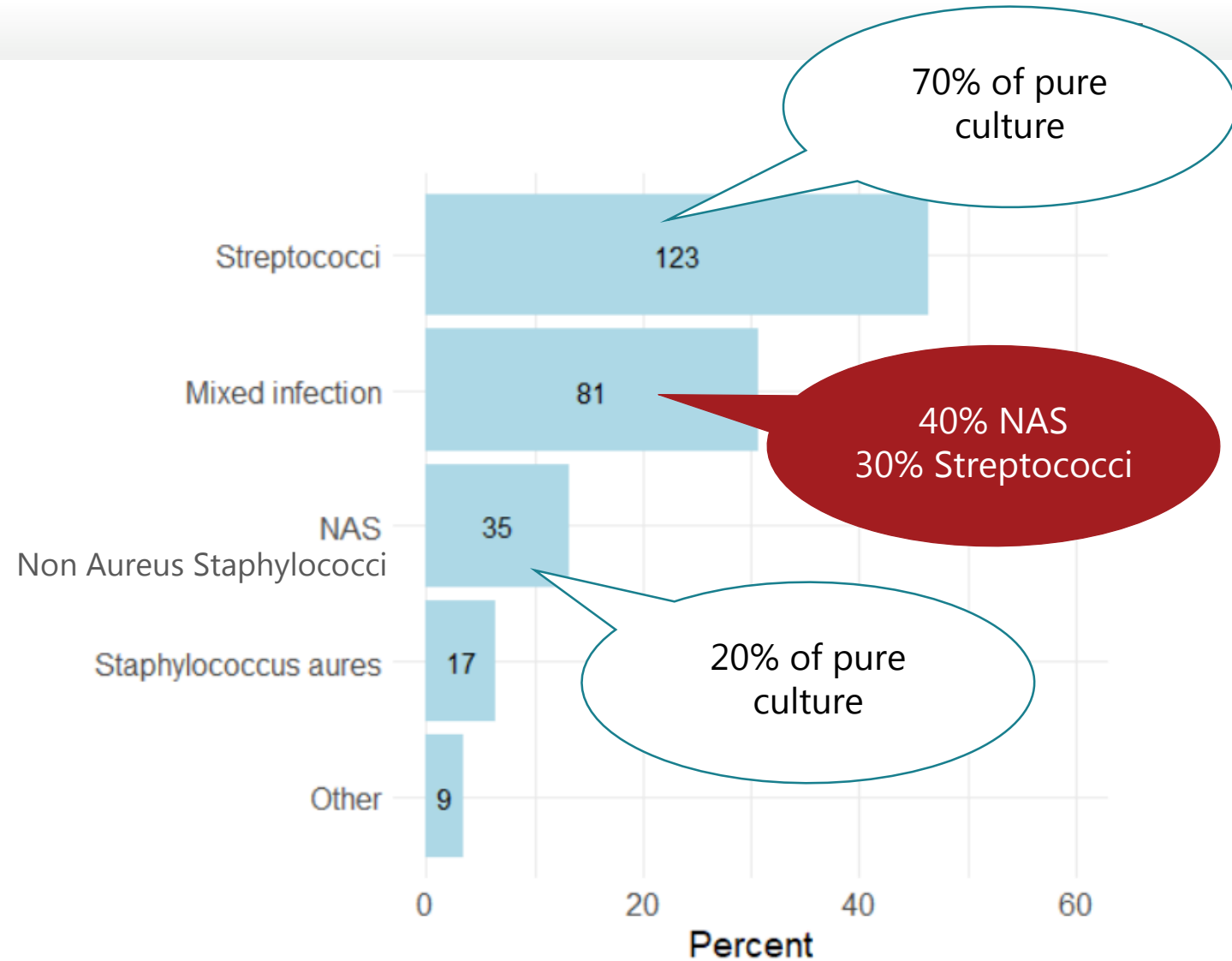
Materials and Methods

- Bacteriology following NMC standards + MALDI-TOF for species identification
 - 2 pathogens = mixed infection
 - >2 pathogens = contamination
- Cure defined as: pathogen(s) in the clinical milk sample not detected in follow-up samples - at species level
- Cow- and case characteristics (DIM, SCC, clinical grade...) included in logistic regression mixed model of treatment effect on bacteriological cure

Non-inferiority analysis

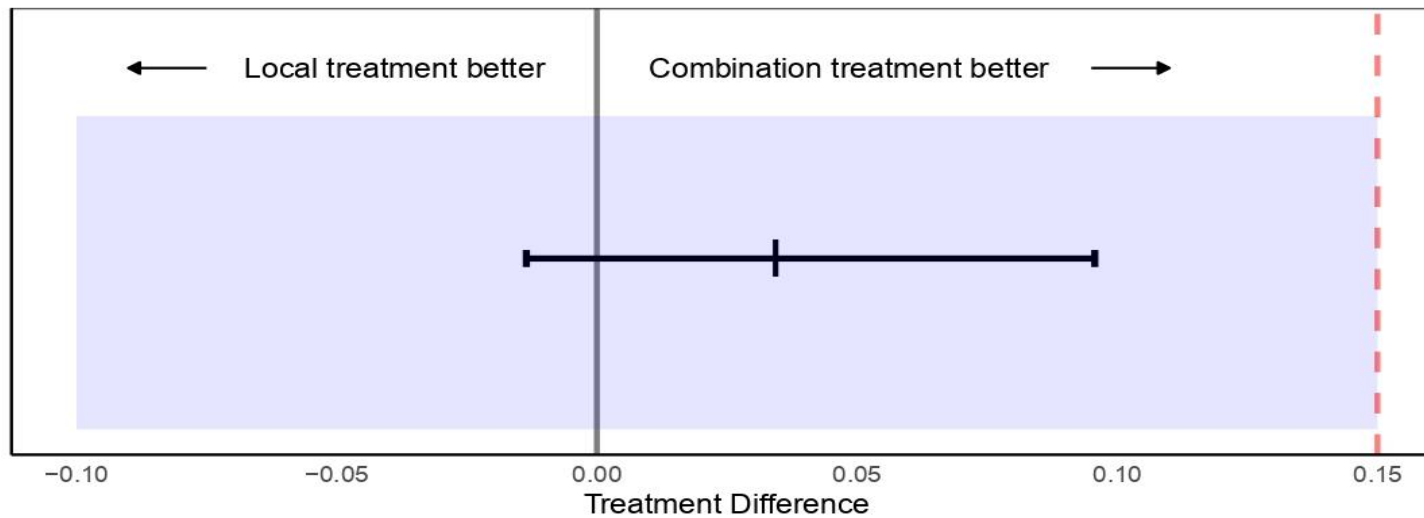
Results

- 265 cases for final analysis
 - Almost 2000 cases registered
 - Mainly excluded by on-farm test
- Pathogen and SCC at DHI before clinical case were relevant in the model



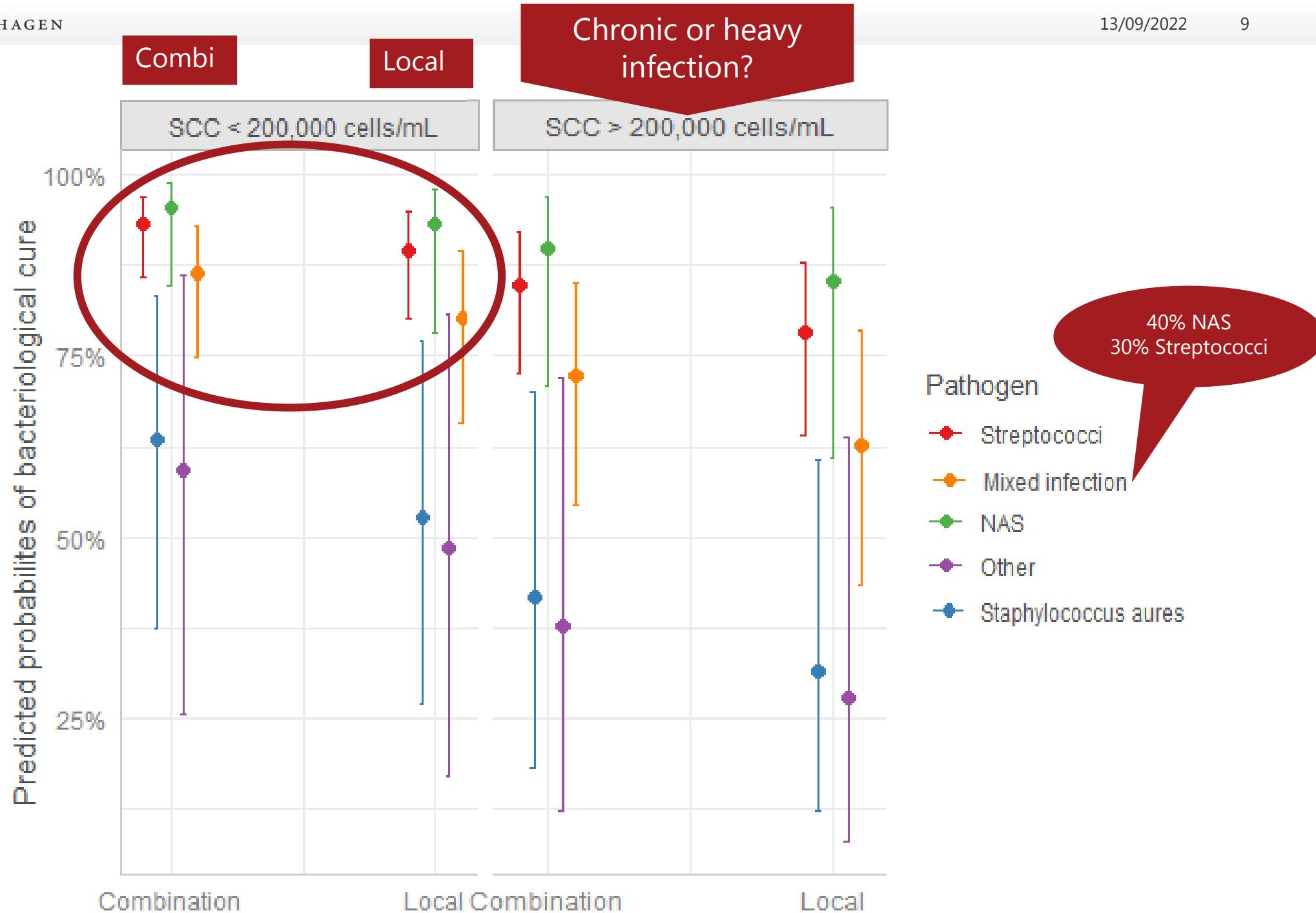
Results – non-inferiority

Overall the local treatment was non-inferior to combined treatment



Results

Cure rates
above
expected
spontaneous
cure



Take-home message

Use your diagnostics !

- Local penicillin treatment compared to combined treatment can reduce antimicrobial usage without reducing bacteriological cure rates by more than 15%
- Effect of treatment is depending on pathogen and SCC at last DHI before clinical mastitis case



Thank you!

Acknowledgements

- The research was funded by the Danish Milk Levy Foundation
- Thanks to farmers participating in the project
- Involved in this research was:
 - Carsten Kirkeby, Alice Skarbye, Tariq Halasa, Volker Krömker, University of Copenhagen
 - Lærke Astrup, Technical University of Denmark
 - Michael Farre, SEGES livestock Denmark

