

Comparison of an evidence-based and a conventional mastitis therapy concept with regard to cure rates and antibiotic usage

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Date submitted: 24/02/2016

Date accepted: 06/06/2016

Volume/Page(s): 69/27-32

Abstract

In milk production, mastitis therapy accounts for the largest proportion of antibiotic use. Numerous studies have suggested that with a differentiated therapy based on mastitis causing pathogens and animal individual variables (regarding the number of lactation, somatic cell count (SCC) and the number of pre-treatments) the amount of antibiotics could be significantly lowered.

The aim of this study was to investigate whether the establishment of an evidence-based mastitis therapy (EBMT) concept could reduce the amount of applied antibiotics compared to a conventional therapeutic (CT) approach with similar curing success. In the EBMT concept the therapy is tailored - with the additional help of on farm culture in the form of Petrifilms™ - to the pathogen and to the patient and includes the latest scientific knowledge. In the CT approach the therapy is only tailored to the patient. The decision concerning therapy depends basically on the knowledge of the therapist and the severity of mastitis symptoms.

To this end, from February until December 2012 all of the approximately 950 cows on a conventional dairy farm in Saxony-Anhalt, Germany, with clinical mastitis cases were assigned to an EBMT- (n = 236 cows) and a CT-group (n = 230 cows) based on the ear tag number and treated accordingly. Subsequently, the results of the two treatment groups were evaluated with respect to the clinical cure (CC), the bacteriological cure (BC), the full cure (FC), the relapse and culling rate and the amount of local and parenteral antibiotics used. Furthermore, the mean costs per clinical mastitis case of these two therapeutic concepts were compared.

There was a significantly higher CC in the EBMT- versus the CT-group with simultaneous significant reduction in the local antibiotic doses without negative influence on the BC, FC, relapse and culling in the EBMT-group. Also, the mean costs per clinical mastitis case were significantly lower in the EBMT-group.

This pilot study showed that by implementing on farm culture the use of an EBMT concept significantly reduces the use of local antibiotics in mastitis therapy without having any negative significant changes in the therapy outcome or economic aspects.