

Recurrent cases of mastitis – causes and solutions

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Clinical bovine mastitis represents the economically most important infectious disease in dairy cows. Up to more than 50% of clinical mastitis cases on farm level can be recurrent cases. The reason for recurrent mastitis can be either a persistent infection of the bovine mammary gland or a reinfection of a quarter or udder after bacteriological cure with a pathogen of the same or another species.

Different reasons require different management actions; therefore, one objective of the present work was to identify the range of persistent cases and cases of reinfection within the recurrent cases of mastitis using cultural methods and molecular biological analysis (RAPD and PFGE). Milk samples of clinical mastitis cases were collected in three Northern German dairy farms from 2011 to 2015. In total 2,043 mastitis cases were examined on quarter level (1,598 1st cases in lactation (78.2%), 445 recurrent cases in lactation (21.8%)). In 145 recurrent cases (32.6%) out of all recurrent cases, the same bacterial species compared to previous cases were identified. With molecular methods in 49 cases (11%), out of all recurrent cases, the same bacterial strain as in the 1st cases could be confirmed. These data show that most (app. 90%) of the recurrent cases are new infections with other bacterial species or other bacterial strains. Therefore, not only treatment and culling rules but also preventing of new intramammary infections is important to prevent recurrent mastitis cases in dairy farms.

We have reviewed this assertion in another study, in which a clinical field study was conducted to determine whether recurrence of mastitis could in principle be prevented by intensive therapy of the first cases in lactation. The intensive therapy (IT) consisted of extended intramammary antibiotic treatment, parenteral antibiotic treatment and one injection of an NSAID. The conventional therapy (CT) consisted of a two-day intramammary antibiotic treatment. Cows in their first three lactations were enrolled when they had their first case of non-severe mastitis in the current lactation, caused either by Gram-positive bacteria or without growth on bacterial culture. It was a non-blinded, positively controlled clinical trial with systematic allocation. IT resulted in a significantly lower recurrent mastitis rate (12.6% vs. 23.4%) and a significantly higher rate of clinical cure, but there was no significant difference in the bacteriological cure and new infection rates.

Further investigation is needed to understand the mechanism behind the recurrence reduction. However, the early administration of a NSAID may reduce tissue damage in the mammary gland and thus reduce the likelihood of recurrence.

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