INTRODUCTION

Mastitis is the most “antibiotic consuming” pathology in dairy medicine. Though antibiotics and anti-inflammatories are known to vets since the early fifties, our practices did not evolve a lot from empiric antibiotic therapy [2]. Nevertheless, there is a surge for rational use of antibiotics. Since 2010 in southern Belgium, an integrated document called “Udder Health File” (LAECEA) was sent to farmers participating in the project LAECEA (“milking” in local wallon dialect), which implies the recording of clinical mastitis cases.

RESULTS & DISCUSSION

A. Characteristics of clinical mastitis in the cohort

Our mastitis cohort (1194 cases) revealed different known characteristics in western countries like a peak of incidence from January to May, and posterior quarters tended to be more affected by clinical cases. Treatment consisted mostly of the time in Intramammary tubes associated or not with a parenteral antibiotic, anti-inflammatory drug were used in 10% of cases (Fig. 3). We also noted that most clinical cases are chronic (80% of cases representing 10% of all records, subclinical mastitis treatment is not very spread in Belgium, and represented less than 1% of cases in the cohort (Fig. 4).}

B. Analyzing Cure rates according to time/seasonality, cellular history and animal characteristics

Our cohort have a calving peak between November and February, so most cases of first trimester occurred between January and April, the peak of incidence remains the second month in milk (Fig. 5).

Rear quarters had significantly lower TC (p<0.05%). Grade 3 mastitis had lower TC, 42.6% (p<0.05%) versus 48.9% for grade 2 and 44.2% for grade 1. Almost 47% of mastitis cases was considered as chronic cases. Indeed, TC was lower on cases from more than 4 month in milk, third lactation (OR = 2.8 for no cure) compared with previous, and chronic cases (OR=2.6). Seemingly, chronicity was positively associated with parity and season. The 3rd parity cases had higher chances to be chronic ones (OR = 1.7), as well as cases from April to September (OR = 1.6).

C. Analyzing cure rates according to treatment type and molecule

While refining data with treatment protocol, it could be frustrating because of the different routes and molecules used, that weakens the comparison. Nevertheless, it was underlined that 4th generation cephalosporins (C4G) were the most used in our cohort, followed by aminopenicillins/metocillin association (PENA/PENC) and 1st generation cephalosporins/aminoglycosids (C1G/AG) association. Of these inmarmary treatments, 20% of the cases were submitted to a second intramammary drug, mostly C1G or C1G/AG. Parenterally treated cases were administered mostly macrolids, fluoroquinolones and penicillin. Finally, most used anti-inflammatory drugs were tolfenamic acid and flunixin-meglumine.

CONCLUSION

Cross-sectional analysis of health data is always challenging, because of the variety of data, the bias and the loss data. However, these data have shown that use of antibiotics in mastitis is around 80%, with less than 60% of chance of reaching good somatic cell counts afterwards. With a simple look at DH data, a mastitis could be better managed in an in-farm protocol [4].

It is interesting that most efficient molecules are wide spectrum association or steroidal anti-inflammatory combination; along with the increased cure rates observed when using parenteral AI. These results underline the question of the management of inflammation in mastitis, which is not well accounted for [2], as well as Gram negative, infectious risk in lactation rather than just post-partum.

Future recommendations over the limitations of AB use should therefore include epidemiological alerts for the risk of chronic cases, least susceptible to be correctly treated, and also alternative to the treatment protocol, such as focusing on inflammation rather than only infection of the quarters.

ACKNOWLEDGEMENTS

This work was funded by grants from the Walloon Ministry of Agriculture. All research projects on mastitis in Wallonia are discussed by participants of the Observatoire pour Udder Health (OSAOU).

www.udderhealth.be / www.mammite.be

REFERENCES