Antibiotics mastitis therapy: drug residue in lambs

C. Testa[1], G. Marogna[2], L. Secchi[1], N. Rubattu[1], G. Leori[2], G. Calaresu[1]

[1] Istituto Zooprofilattico Sperimentale della Sardegna. Centro di Referenza Nazionale per la Zootecnia Biologica, Sassari, Italy

[2] Istituto Zooprofilattico Sperimentale della Sardegna. Centro di Referenza Nazionale per le Mastopatie degli Ovini e dei Caprini, Sassari, Italy

Corresponding author: Giovanni Calaresu. Centro di Referenza Nazionale per la Zootecnia Biologica. Istituto Zooprofilattico Sperimentale della Sardegna. Via Duca degli Abruzzi 8, 07100 Sassari, Italy - Tel. +39 079 2892268 - Fax:+39 079 2892264 - Email: g.calaresu@izs-sardegna.it

ABSTRACT

Meat coming from suckling lambs (max 12 Kg BW) is a typical Sardinian taste dish, normally consumed during the religious linked feasts. The aim of this work is to evaluate drug residues in suckling lambs meat as consequence of antibiotics mastitis therapy in their mothers during lactation.

The study was performed on twelve Sardinian ewes, that had lambed within two days of one another, with suckling lambs from a single flok of 150 animals. Milk bacteriological screening showed that 10 ewes out of 12 were positive and Coagulase-Negative Staphylococci were identified. The ten positive sheep were divided into two groups A and B, and each of them were given two successive intramuscularconsecutive intramuscolar injection of 6 ml of oxytetracycline OTC (Terralon 20% LA, Virbac) within 72 hours; the two negative sheep were used as control (C group). With the two ewes Group two trials were conducted: to the A treatment started 17 days after delivery, while group of 6 ewes, drug administration was given when lambs were 17 days old, to the B has been treated 28 days after delivery. During the experimental period milk was sampled twice a week; 5 milk samples/ewe for group A and 2 samples/ewe for group B were collected. Lambslambs were regularly slaughtered at about 35 days old and muscle tissue has been collected.sampled. All samples were immediately frozen until analysis. Oxytetracycline milk residues were measured by High Performance Liquid Chromatography with diode array detector while, for OTC tissue levels, LC/MS-MS technique was used. OTC concentration in milk, as observed in our own previous study, decreasedranged from 3,500 to 0,050 µ g/ml over three weeks. OTC residues were detected in both groups of lambs at levels below Maximum Residue Limit (MRL 0.100 µg/g). In order to avoid any drug residue in food chain, and an increase of drug resistance, national legislation should pay attention to avoid use of antibiotics in ewes feeding lambs that will be slaughtered.

This study has been carried out by Italian research project IZS SA06/03 funded by the Italian Ministry of Health.