Usage of antimicrobials in veal calves
Potentials and limitations of register based data

High use of antimicrobials and multidrug resistance has been reported in European veal calves. Purchase of calves from multiple dairy herds, transport and commingling of new animals expose veal calves to a high risk of disease, where pneumonia has been identified as the most prevalent disorder during the first month after introduction. So far, antimicrobial use in Danish veal calves has only been sparsely described.

Based on data from VetStat, we extracted the total amount of antimicrobials registered for Danish veal calves in 2014. Antimicrobials were quantified as Animal Daily Doses for veal calves with a standard weight of 200 kg (ADD200). We found antimicrobials to be prescribed for respiratory (78.9%), joints/limbs/CNS (17.1%), gastrointestinal (3.7%) and other disorders (0.3%). Products for parenteral administration were more commonly prescribed (85.4%), than products for oral administration (14.6%). Among products for parenteral administration, long-acting formulations (effect >48 hours) covered 58% of prescribed ADD200.

Additionally, we compared the antimicrobial use between herds. From the Danish Cattle Database, we extracted information on the number of registered calves and identified four different herd types based on the movements of veal calves. Herds either held the calves in the beginning of the production period (starter herds, n=22), the end (finisher herds, n=24) or throughout the whole production period (full-line herds, n=183). Finally, a number of herds had an inconsistent pattern of movements (n=96). For a comparison of antimicrobial use at the herd-level, we standardized antimicrobials as ADD200 per 100 calves per day (ADD200/100 calves/day) in agreement with the official unit used by the Danish Veterinary and Food Authority. We found a wide variation in antimicrobial use between herd types (median [CI95%]); starter herds 2.14 [0.19;7.58], finisher herds 0.48 [0.00;1.48], full-line herds 0.78 [0.05;2.20] and herds with inconsistent movements 0.62 [0.00;2.24]. For full-line herds, we additionally performed a risk factor analysis on factors available in the registers (herd size, number of suppliers, number of calves introduced, frequency of purchase, average age at introduction, average time in the herd, purchase of calves from markets/delivering traders and vaccination). Number of calves introduced was the only factor remaining in the final model and was positively associated with the antimicrobial use in Danish full-line herds.

For more information please see: A register-based study of the antimicrobial usage in Danish veal calves and young bulls. Preventive Veterinary Medicine 131 (2016), 41-47.

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