Quantification, Benchmarking and Stewardship of Veterinary Antimicrobial Usage

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ABSTRACTS BOOK

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Trends in antimicrobial use in veal calves (2014-2016) and associated risk factors

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The veal industry is known to be one of the highest users of antimicrobials among all livestock production systems, and in the period 2007-2009, the Belgian veal industry used 60 DDDvet/year. The objectives of the present study were to provide an overview of quantitative and qualitative use of antimicrobials in the largest veal veterinary practice in Belgium in the period 2014-2016, and (2) to identify risk factors associated with antimicrobial use (AMU) to help this sector to a further reduction. A retrospective cohort study was performed. AMU data were electronically collected from a single veterinary practice in Flanders, through their software program. Standard daily dose methodology was used to quantify AMU. Mixed linear and logistic regression was used to identify risk factors for AMU. The dataset consisted of 295 production cycles from 78 farms, involving 146.014 veal calves and 8 different integrations. The average AMU was 32,3 DDDvet/year ±SD=11,04, of which 76,2% was administered orally and 23.8% parentally. The total AMU over 2014-2016 did not significantly alter. A significant reduction in the use of critically important antibiotics, compared to the historical data (2007-2009) was noted. A reduction of 95,9% was achieved for fluoroquinolones (FQ) and third and fourth generation cephalosporins (CS) and 91,1% for colistin (C). Additionally a reduction in oxytetracycline (OTC), trimethoprim-sulphonamides (TMS), lincosamides (LS) and penicillin was seen. In contrast, there was an increased use of long-acting macrolides (MLA), doxycycline (DC), classic macrolides (CM) and aminosides (AS). Significant risk factors for total AMU were: year, breed, integration and month. Holstein Friesian calves and crossbreeds were treated significantly less than Belgian blue beef calves (26,4±10,6, 35,5±8,9 and 37,2±10,6, respectively). Production cycles started in May used less AMU than these started in September to December. A significant effect of integration on total AMU and on the use of different antimicrobials was found (FQ, OTC, C, TMS, LS, MLA, DC, CM and AS). Additionally, breed differences in the use of OTC, C and CM were present.

Conclusion
These data show that this veterinary practice used 46% less antimicrobials compared to data from 2007-2009 in Belgium. The shift away from critically important antimicrobials (FQ, CS, C), although partial replacement by the also critically important long-acting macrolides was done. This study showed the need for benchmarks adjusted for each breed, and identified the integrator as an influencer of AMU in veal farms and target for sensibilisation campaigns.