Local tolerance of two florfenicol injectable solutions in fattening pigs

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Background

The local tolerance at injection site is an important parameter for animal welfare and to avoid lesions which may impair carcass quality. The aim of this study was to compare local tolerance of two injectable formulations marketed in Mexico, both containing 400 mg of florfenicol per mL.

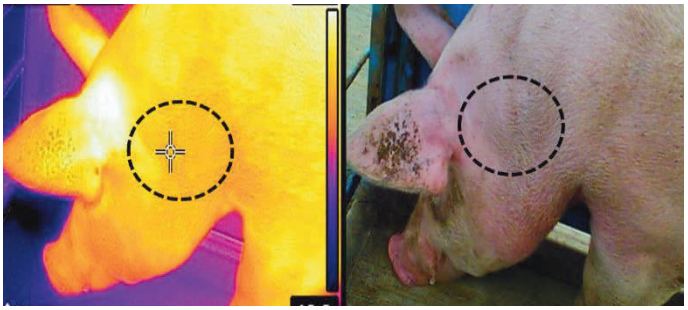
Materials and methods

Fourteen healthy pigs of both sex weighing 82 kg in average were housed in individual pens and randomly allocated to 2 groups receiving one of the 2 formulations tested (group A : Maxflor®L.A, Virbac and group B : Colmax®, Aranda). The pigs had not received any injection in the neck during the month preceding inclusion. Both products were administered according to registered posology (2 intramuscular injections 48 h apart at the florfenicol dose of 15 mg/kg, i.e. 1 ml/26.7 kg). Injections were done 3 inches behind the ear (in left side for the first injection and in right side for the second one) with single use syringes and needles (16Gx1"). All injection sites were scored for swelling, pain, pruritus and size of inflammation zone on 1, 3, 7 and 14 days after administration by clinical examination and thermography. Pigs were slaughtered when withdrawal time of products had elapsed (14 days after second injection). Macroscopic examination of all injection sites was done according to a grading scale. Samples of all injection sites were taken for histopathology after fixation by formalin, embedding into paraffin then Haematoxyllin and Eosin staining of 3-5 µm thin sections. Blinded observations were made for clinical and post mortem phases. The rates of lesions were compared between groups according to Fisher's exact test.

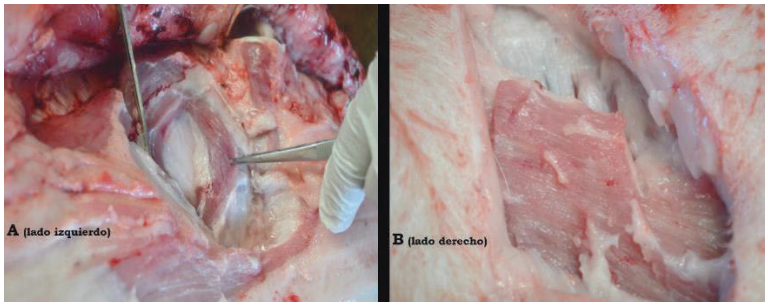
Results

No general or local side effects were recorded on any of the animals. No macroscopic lesions were observed in any of the injection sites. Microscopic lesions were scored on 21% (3/14) of injections sites from group A and 64% (9/14) of injection sites from group B. Lesions in group A consisted in mild to moderate granulomatous infiltration, fibrosis and haemorrhage whereas lesions in group B included also mild to severe necrosis in 57% (8/14) of injection sites, difference between groups being significant (p=0.002).

Injection site examination by thermography (no increase of temperature)



Post mortem examination of injections sites (no gross lesions)



Conclusion

Our results suggest that both products were well tolerated clinically and did not induce visible macroscopic lesions at injection sites 14 days after the second injection. However, more severe microscopic lesions (particularly necrosis) were observed in group B which may reflect formulations differences.