

Critical appraisal – Standard questions

Forbes et al. (2014)

| | |
|--|--|
| Introduction | |
| Are the aims clearly stated? | Yes |
| Methods | |
| Is the study design suitable for the aims? | Yes, a descriptive case series |
| What population of animals was being studied? | One German flock of 184 Merinolandschaf ewes, and 48 Danish sheep farms |
| Is it clear what measurements were carried out in the study? | It is clear what outcomes were measured but not how they were measured. Outcomes measured were footrot lesion scoring, lameness, and PCR analysis of presence of <i>D nodosus</i> . 'Warm feet' appeared as an outcome when reporting the results but did not appear in the methods. |
| Were the correct measurements chosen? | Yes |
| Do they that reflect (or are they strongly related to) the outcome of interest? | Yes |
| Were previously established validated methods used to make the measurements? (e.g. Glasgow pain score, International Units etc) | A reference to a previous study was made for the footrot lesion scoring method, although the previous study outlined a scoring system from 1-4 and not 0-5 as was used in this study The PCR analysis method was referenced The lameness scoring system was not referenced |
| Are the statistical methods described? | No – but only descriptive statistics were used |
| Was the statistical significance level stated? | N/A |

| | |
|---|--|
| | |
| Was the sample size justified? | No. For the Danish flocks, the authors state that the sampling regimen was adequate to detect a flock prevalence of 32 per cent. |
| Was ethical approval obtained? | Not stated |
| Overall, are the methods described in enough detail that you could repeat them? | Further detail is required |
| Results | |
| Were the basic data adequately described? | More detail is required |
| Do the numbers add up? Are all subjects accounted for? | The denominators at the various time points where measurements were made are not given, so it is difficult to see if all subjects are accounted for |
| Was the statistical significance (p value) stated in the results? Is this consistent with the methods? (It should be stated in the sample size or power calculation) | No, but no statistical analyses were undertaken |
| What were the main findings/key results? | <p>German Merinolandschaf flock:</p> <ul style="list-style-type: none"> • At the beginning of the study, 117/184 animals had footrot lesion score of ≥ 1; at day 23, 8 animals had footrot lesion score >1 which were re-treated; and at day 45, no positive scores were seen. • No initial lameness scoring is reported, but at day 23, 8 animals were lame and were re-treated, at day 45, no lameness was seen. During the following 6 months, 5 animals were lame • At day 23, 8 animals lame animals tested PCR positive for <i>D nodosus</i>, 11 animals |

| | |
|---|---|
| | <p>with 'warm feet' tested PCR negative for <i>D nodosus</i>; 6 months later 5 animals lame tested PCR negative for <i>D nodosus</i></p> <p>Danish flocks:</p> <ul style="list-style-type: none"> • Of the 48 flocks where one or more of a selection of 8 sheep tested PCR positive for <i>D nodosus</i> initially, 44 converted to being PCR negative when 8 animals were tested more than one year later <p>It was stated that a few individual sheep developed transitory injection site reactions, but the number of these was not mentioned</p> |
| Discussion and conclusion | |
| <p>What do the main findings/key results mean?</p> | <p>There is a decrease in the number of PCR positive sheep (sampled from the flocks) after treatment, but how this relates to lameness levels (and those prior to the start of the study) is difficult to determine</p> <p>There is a decrease in footrot scores in the German flock after treatment</p> <p>The authors talk about the treatment being effective for 'positive elimination' from sheep flocks, but with the sampling regime (8 sheep per flock) used in the Danish flocks, this would be somewhat difficult to support</p> |
| <p>Are the negative findings discussed?</p> <p>How are the negative findings interpreted?</p> | <p>No as there weren't any. They did not measure lameness in the Danish flocks.</p> |
| <p>Does the discussion reflect the results?</p> | <p>There is an amount of discussion around the responsible use of antibiotics and the development of resistance genes</p> |
| Interpretation | |

| | |
|---|---|
| <p>What are the clinical implications of this study?</p> <p>Are the subjects in the study similar to those in the BET/your own?</p> | <p>This is a case series carried out on a defined group of farms. This treatment is not licensed for use in sheep in the UK; there are other antimicrobials that are licensed for use for footrot which according to the cascade, should be used first.</p> <p>The subjects of our BET were Welsh Mountain sheep, so may be different to the sheep in the study</p> |
| <p>General</p> | |
| <p>Who funded this study?</p> | <p>Merial, the manufacturers of gamithromycin, funded the German flock study. The primary author was a full-time employee of Merial. Funding for the Danish flock study was not stated.</p> |