THE EFFECT OF KETOPROFEN ADMINISTERED POST FARROWING ON PRE WEANING MORTALITY

Sarah H Ison* & Kenneth M D Rutherford

Animal & Veterinary Sciences
Scotland’s Rural College (SRUC)
Roslin Institute Building
Easter Bush

*Sarah.Ison@sruc.ac.uk
Background

• Ketoprofen = non-steroidal anti-inflammatory drug (NSAID)

• Post-farrowing- likely to be inflammation and pain

• Post-farrowing ketoprofen potential to ↑ sow welfare & productivity

• Ketoprofen vs. placebo = ↓ piglet mortality (Homedes et al 2014; Sabaté et al 2012), but not in all studies (Viitasaari et al 2013; 2014)
Aim

- To investigate the welfare and productions benefits of administering a single intra-muscular injection of ketoprofen to sows, 1.5 hours post-farrowing.
Animal and experimental procedure

- Randomised, blinded, placebo controlled trial
  - 24 primiparous sows
  - 32 multiparous sows (17 parity two to four, 11 parity five to seven and 4 parity eight+)
- Randomly allocated to receive 3 mg/kg ketoprofen or saline
Animal and experimental procedure

Sows move in 3-5 d pre-farrow

Parturition – last piglet born

Injection – ketoprofen or saline

1.5 hours

6 hours

Post birth data

- Behavioural data collection:
  - Pain
  - Suckling

- Piglet weight and CR
- Colostrum – gilt or sow
- Blood – 3 piglets per litter

Weaning: approx. 28 d

All piglet mortality recorded
Piglet blood and gilt/sow colostrum samples

- Colostrum:
  - Sampled and frozen at -20 °C

- Piglet blood:
  - Sampled and centrifuged, serum frozen at -80 °C

- Samples thawed and assayed for immunoglobulin G using an ELISA kit (Bethyl laboratories, Inc.)
Data analysis

- Live born mortality (LBM, %) calculated
- Data analysed using mixed models with the REML method in Genstat 14th edition gilts and sows as separate data sets:
  - GLMM for LBM
  - LMM for weights, measures and IgG
Live born mortality, %

P = 0.1

<table>
<thead>
<tr>
<th>Group</th>
<th>CON</th>
<th>DRUG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gilt</td>
<td>14.48</td>
<td>6.53</td>
</tr>
<tr>
<td>Sow</td>
<td>14.88</td>
<td>12.23</td>
</tr>
<tr>
<td>All</td>
<td>14.70</td>
<td>9.91</td>
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</table>
Piglets – 6 hours post-injection

Average piglet weight at 6 hours post-injection vs. live born mortality

\[ r_s: \text{Gilts} = -0.452, \ P = 0.03, \ Sows = -0.484, \ P = 0.005 \]
Immunoglobulin-G (IgG)

A) Colostrum

B) Piglet Serum
Discussion

• Piglets – larger at birth or a benefit of the drug or both?
  – Piglets from gilts and sows larger in drug group
  – Piglets also have longer crown-rump in drug group
  – No difference in IgG concentrations

• LBM for ketoprofen gilts is low for the study farm and previous studies shown reduced LBM with the drug (Homedes et al 2014; Sabaté et al 2012)

• Larger sample size needed for future studies
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Thank You for listening
References


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