Parturition effects on reproductive health in the sow

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Part II: Effect of parturition on subsequent reproductive health

1) Factors affecting the size of the uterus
   (Delayed uterine involution)
2) Factors affecting fluid accumulation in the uterus (Puerperal metritis)
3) Oxytocin release at subsequent estrus between sows with short and long farrowings
4) Lactation weight loss between sows with short and prolonged farrowings
5) Follicular development between sows with short and prolonged farrowings
Uterine size postpartum (uterine involution):

- 2
\(^{\text{nd}}\) day: 4.3 ± 1.2 (n=9)
- 3
\(^{\text{rd}}\) day: 4.2 ± 1.9 (n=28)
- 4
\(^{\text{th}}\) day: 4.1 ± 1.2 (n=25)
- 5
\(^{\text{th}}\) day: 3.8 ± 1.2 (n=21)
- 6
\(^{\text{th}}\) day: 3.8 ± 1.1 (n=14)
- 7
\(^{\text{th}}\) day: 3.4 ± 0.9 (n=10)
Factors affecting the size of the uterus (Delayed uterine involution)

- Farrowing duration
- Dystocia and stillborn piglet
- Obstetrical intervention
- Retained placenta

Oxytocin supports uterine involution
Factors affecting fluid accumulation in the uterus (Puerperal metritis)

- Dystocia and stillborn piglets
- Obstetrical intervention
Oxytocin release at subsequent estrus between sows with short and long farrowings:

• Higher oxytocin concentrations in sows with prolonged farrowing
• Difference between short and prolonged farrowing durations especially in young sows (≤ Parity 3)
Lactation weight loss between sows with short and prolonged farrowings:

- Weak associations between:
  - Farrowing duration – lactation weight loss
  - Lactation length – lactation weight loss

Lactation length: 30 ± 4 days
Lactation weight loss: 3.5 ± 7%

Follicular development between sows with short and long farrowing durations:

- Marginal difference at day 4 after weaning

<table>
<thead>
<tr>
<th>Farrowing Duration</th>
<th>Short</th>
<th>Long</th>
<th>SE</th>
<th>P</th>
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<tr>
<td>Days</td>
<td></td>
<td></td>
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<tr>
<td>Wet 1</td>
<td>5.0</td>
<td>5.1</td>
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<tr>
<td>Maximum 1</td>
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<td>4.3</td>
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<td>Diameters, mm</td>
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<tr>
<td>Day 3</td>
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<td>0.56</td>
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<tr>
<td>Day 4</td>
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<td>Day 5</td>
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<td>Oestrus 1</td>
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<td>0.4</td>
<td>0.84</td>
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<tr>
<td>Maximum 1</td>
<td>6.0</td>
<td>5.9</td>
<td>0.2</td>
<td>0.80</td>
</tr>
</tbody>
</table>
Summary

Uterus postpartum:
• Risk factors for uterine infection: stillborn piglets and obstetrical examination
• Factors delaying uterine involution: Risk factors for uterine infection + farrowing duration (+ retained placenta)

Lactation weight loss:
• A weak association between farrowing duration and lactation weight loss
• Overall a low lactation weight loss

Subsequent estrus:
• Sows with long farrowings have marginal bigger follicles at day 4 after weaning
• Sows with long farrowings have higher oxytocin concentrations at subsequent estrus during boar exposure
Negative effect of farrowing duration on subsequent fertility:

- Weight loss can not explain it
- Higher oxytocin concentrations at subsequent estrus can not explain it!
- Delayed uterine involution and/or persistent uterine infection can explain!
  (Connection with follicular development?)
Thank you very much!