Effect of farrowing duration and exogenous oxytocin on placenta expulsion

Stefan Björkman, DVM
PhD candidate, ECAR resident
ELDTK, HY
Introduction: Increase in litter size
## Introduction: Increase in farrowing duration

<table>
<thead>
<tr>
<th>Year</th>
<th>Duration (± Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>130 ± 89</td>
</tr>
<tr>
<td>2010</td>
<td>268 ± 142</td>
</tr>
<tr>
<td>2014</td>
<td>411 ± 250</td>
</tr>
</tbody>
</table>
Introduction: effects on subsequent fertility

Both, increase in litter size and increase in farrowing duration, have been associated with decreased subsequent fertility.
Part I: Effect of farrowing duration and exogenous oxytocin on placenta expulsion
Long farrowing duration and/or high litter size will lead to exhaustion of the uterus → **Secondary uterine inertia**

But, uterine contractions needed for:
- Separation of the placenta
- **Expulsion of the placenta**
- Expulsion of other uterine content, e.g.
  - Bacteria
  - Cell debris
  - Fetal fluids

**Do sows with a prolonged farrowing have impaired placenta expulsion?**
Factors affecting number of placental parts

- Farrowing duration → impaired in farrowing durations > 800 minutes
- Litter size → the larger the more
- Parity → the higher the more
- Exogenous use of oxytocin → more

Factors affecting placenta expulsion duration

- Farrowing duration → the longer the longer; impaired if farrowing duration > 800 minutes
- Litter size → the larger the longer
- Exogenous use of oxytocin → shorter
Factors affecting onset of placenta expulsion

- Farrowing duration → The longer the earlier
- Parity → The higher the later

Factors affecting the end of placenta expulsion

- Exogenous use of oxytocin → overall, short interval → In prolonged farrowing, longer interval
Partial retained placenta
• About 6% of the sows
• Farrowing duration about 750 Minutes

Total retained placenta
• About 3% of the sows
• Farrowing duration about 1000 Minutes

Fig. 5. Ultrasound image of one sow with total retained placenta at day 3 after onset of farrowing. Ultrasound findings are dense structures inside the uterine lumen and endometrium. A – Uterine horn; B – Uterine lumen and endometrium; C – Enlarged blood vessels.
Summary about Placenta expulsion

- Takes about 4-5 hours
- Depends on litter size and parity
- Compromised in sows with farrowing durations longer than 700-800 Minutes
- Improved by injection of oxytocin

Use of oxytocin

No use of oxytocin
Summary about use of oxytocin

• Improvement of placenta expulsion
• Quickening of expulsion duration
• Prevention of retained placenta

→ **Recommended to use in sows with prolonged farrowing after expulsion of the piglets** (after 30 minutes)

**General guideline for use of oxytocin**

• Use only restricted
• If birth canal is not obstructed
Thank you very much!

www.facebook.com/pigresearch