



Parturition effects on reproductive health in the sow

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Part II: Effect of parturition on subsequent reproductive health

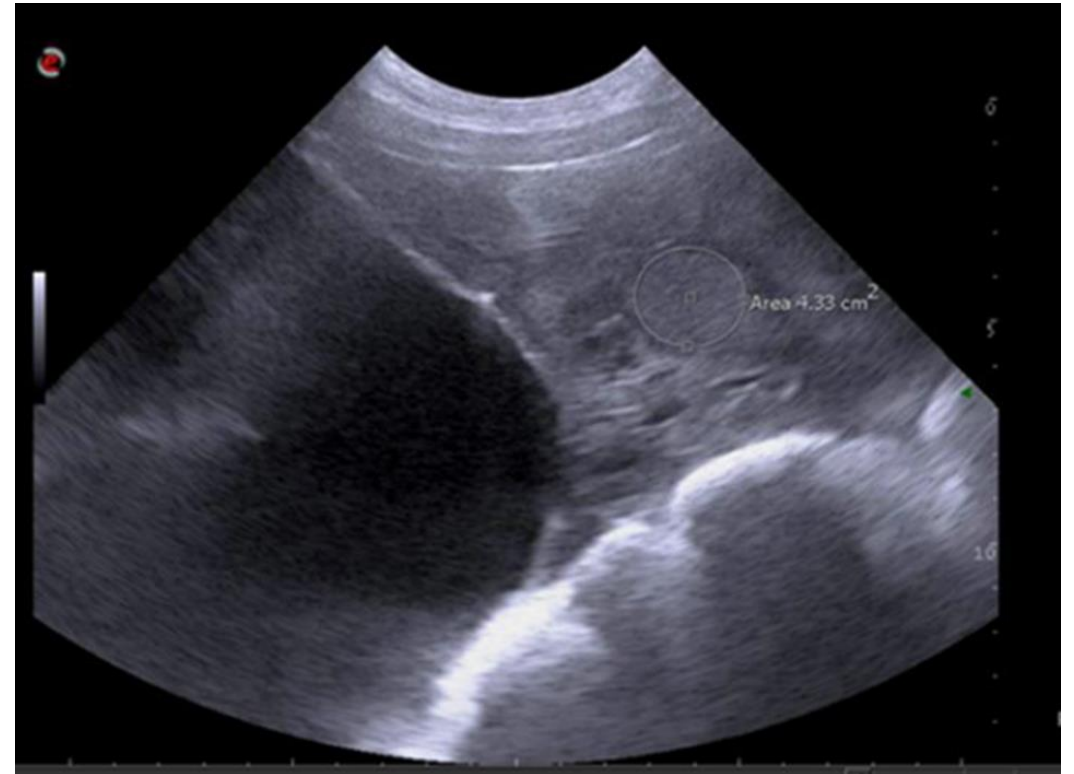
- 1) Factors affecting the size of the uterus (Delayed uterine involution)
- 2) Factors affecting fluid accumulation in the uterus (Puerperal metritis)
- 3) Oxytocin release at subsequent estrus between sows with short and long farrowings
- 4) Lactation weight loss between sows with short and prolonged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





Uterine size postpartum (uterine involution):

- 2nd day: 4.3 ± 1.2 (n=9)
- **3rd day: 4.2 ± 1.9 (n=28)**
- 4th day: 4.1 ± 1.2 (n=25)
- 5th day: 3.8 ± 1.2 (n=21)
- 6th day: 3.8 ± 1.1 (n=14)
- 7th 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)

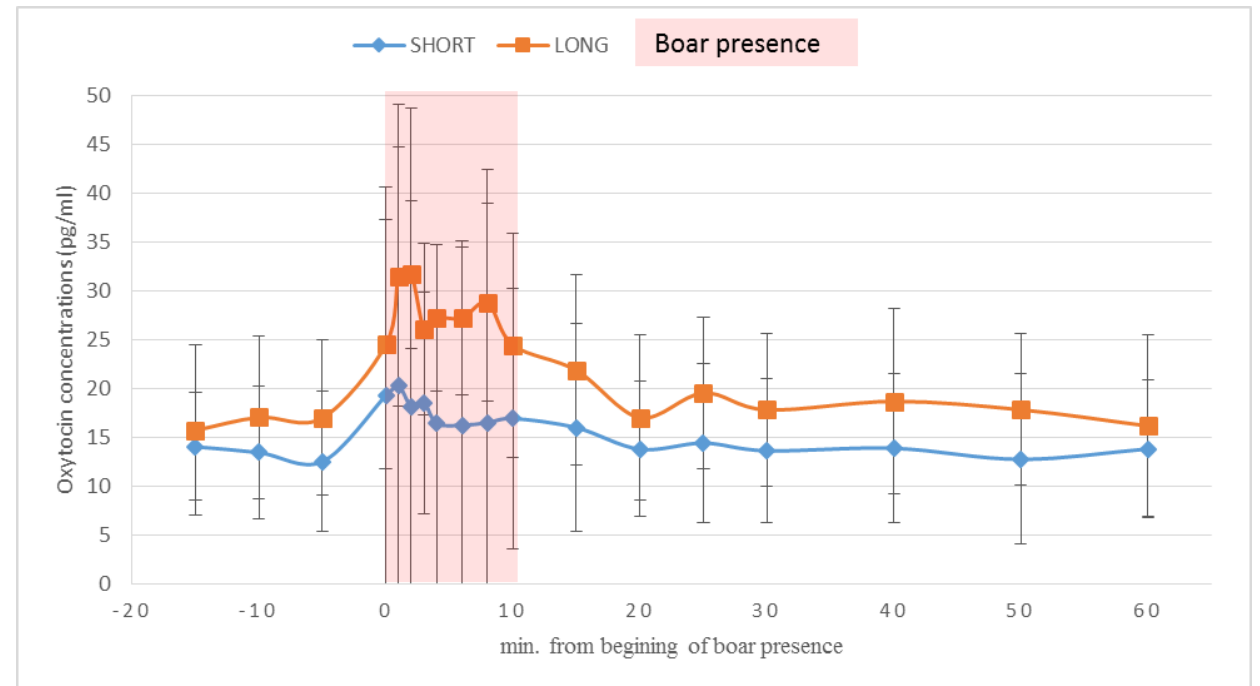
- Dystocia and stillborn piglets
- Obstetrical intervention





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 (\leq Parity 3)



Time (min) ²	YOUNG				OLD			
	SHORT (n=9)	LONG (n=5)	SE	P	SHORT (n=5)	LONG (n=11)	SE	P
-15 to -5 min	14.1	14.5	1.1	0.79	13.6	13.5	2.4	0.97
0 to 10 min	19.2	27.1	2.0	< 0.001	24.2	27.7	3.2	0.29
15 to 60 min	13.5	16.4	1.2	< 0.01	17.3	16.1	1.3	0.34
-15 to 60 min ³	15.8	21.3	1.3	< 0.001	17.5	19.4	1.8	0.29



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: $3.5 \pm 7\%$

Follicular development between sows with short and long farrowing durations:

- Marginal difference at day 4 after weaning

	Farrowing Duration			
	Short	Long	SE	<i>P</i>
Days				
WEI ¹	5.0	5.1	0.2	0.79
Maximum ²	4.6	4.3	0.6	0.77
Diameters, mm				
Day 3 ³	4.6	5.3	0.8	0.56
Day 4 ³	5.3	5.9	0.3	0.06
Day 5 ³	5.8	6.0	0.3	0.44
Oestrus ⁴	5.9	5.8	0.4	0.84
Maximum ⁵	6.0	5.9	0.2	0.80



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:

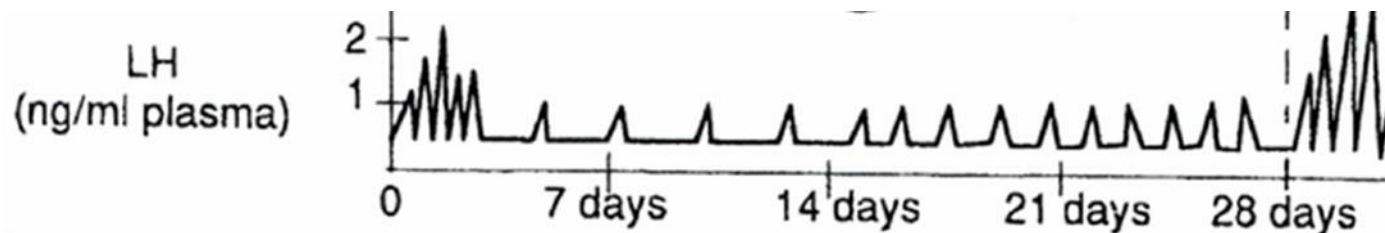
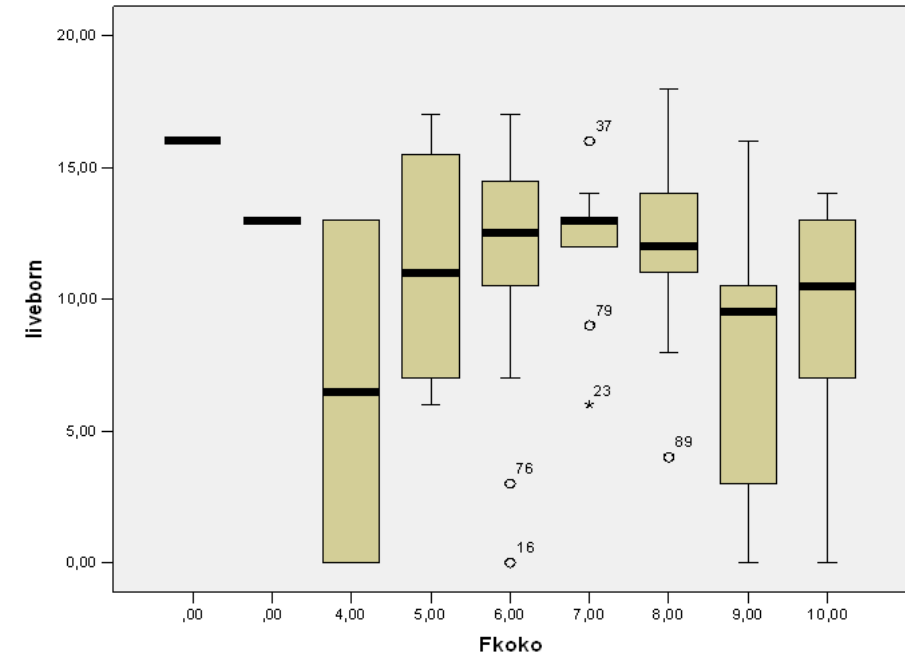
- Sows with long farrowings have marginal bigger follicles at day 4 after weaning
- Sows with long farrowings have higher oxytocin concentrations at subsequent estrus during boar exposure



Summary

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!



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