

EFFECT OF EXOGENOUS GIVEN OXYTOCIN TO SOWS DURING PARITY,
ON THE PARTURITION TIME, STILLBIRTHS AND M.M.A. SYNDROME.
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In intensive modern swine production disturbances in physiological status of the organism which have direct or indirect influence on parturition are often encountered. Some of these troubles are: prolonged time /more than 6 h/ of farrowing, increasing the stillbirth rate and a larger number /percentage/ of sows with mastitis, metritis agalactiae syndrome.

On the prevention of this poor-health status oxytocin parenterally given to sows is widely used.

Because of discrepant results obtained by different authors, an attempt has been made to explain this problem.

Materials and methods

Observations were made in 3 industrial farms /A, B, C/ with 836 sows /primiparous and multiparous/ during their parturition period.

In farms A and B, animals were divided into 3 groups /I, II, III/ and in farm C into 2 groups /I, II/. Groups I in all the farms were controls without any hormonal treatment. In groups II sows received 10 I.U. of synthetic oxytocin /Chemische Fabrik Gedeon Richter A.G. Budapest/ given intramuscularly /i.m./ after birth of the first piglet and eventually again, if interruption between succeeding piglet delivery was longer than 1 hour. Sows from groups III /farms A, B/ received 2 ml of solution containing 10 I.U. oxytocin administered intranasally /i.n./ in the same manner as groups II. When no acceleration of delivery was observed ten to twenty minutes after the oxytocin applications, fetus position was examined and if necessary the fetus position was reposed.

Farrowings of each group were observed and the following data were recorded: parturition time, stillbirths and incidence of M.M.A. syndrome.

Results

The results are presented in tables 1 and 2. Table 1. Influence of exogenous oxytocin on the parturition time.

Unit	Group	Nr of sows	Percentage of sows with length of parturition/h/			
			1-3	3-6	6-10	10
A	I	100	8	75	15	2
	II	100	34	57	9	0
	III	100	12	66	12	0
B	I	100	41	40	14	5
	II	100	45	47	8	0
	III	100	47	44	9	0
C	I	118	32,6	53,4	14	0
	II	118	39,7	51,8	8,5	0
	III	-	-	-	-	-

Table 2. Influence of exogenous oxytocin, on stillbirth rate and the incidence of M.M.A. syndrome.

Group	Nr of sows	average litter size	Stillbirths		M.M.A.	
			Nr.	%	Nr.	%
I	100	9,78	44	4,48	25	25
II	100	10,27	43	4,18	17	17
III	100	9,98	45	4,51	20	20

Continued tab 2.

I	100	10,77	88	8,16	42	42
II	100	9,41	68	7,23	24	24
III	100	10,47	82	8,06	25	25
I	118	9,00	52	4,98	28	23,7
II	118	9,41	47	4,23	24	20,3
III	-	-	-	-	-	-

If we analyze parturition times /tab 1/ we see that all sows which received oxytocin /i.m./ farrowed shorter than 10 h; whilst sows in the control group farrowed longer than 10 h. In addition, the number of sows farrowed within the best possible time i.e. 1-6 h was by 5,5%-11% higher in the experimental groups than that in the controls.

Similar results were obtained by Tsoutsis et al, 1980, Zerobin 1972, Büning et al 1978, and Lee 1977/. It should be stressed that the above cited authors used different doses of oxytocin, from 0,1-0,2 I.U. administered i.v. by Zerobin to 40 I.U. administered i.m. by Lee. Tsoutsis used 15-20 I.U. of oxytocin i.m.

The data contained in table 2 show that the stillbirth rate in the experimental sows from groups II was only about 0,30-0,97% lower than that in the control group. Sows in group III from farm B which received intranasal oxytocin had a lesser stillbirth rate only by 0,1% in comparison to the control. Data in tab.2 regarding the results of M.M.A. syndrome are very interesting. As it has been shown in each experimental group much less cases of M.M.A. syndrome than in the control groups were observed.

The differences in the activity of oxytocin administered i.m. or i.n. were not essential, but it was always observed that oxytocin administered i.m. was slightly more effective.

Conclusions

- Oxytocin administered i.m. or i.n. in doses of 10 I.U. to sows during parturition shortens farrowing to less than 10 h, increases the number of sows farrowing in the optimal physiological time 1-6 h, and reduces the occurrence of M.M.A. syndrome.
- Oxytocin administered to sows as above does not lessen the rate of stillbirth.

Selected references: Büning J., Duckhart J.: *Mh. Vet.-Med.* 1978, **33**, 446. Curtis S.L.: *J. Anim. Sci.* 1974, **38**, 1037. Duensing R.: *Paed. Tierarztl. Hochschule Hannover* 1970. Lee C.: *Korea J. Vet. Res.* 1977, **17**, 12. Randall G.C.B. *Biol. Neonate* 1979, **26**, 83. Tsoutsis G., Szymanski J.J. *Proc. Congr. I.P.V.S. Copenhagen* 1980. Wrathall A.S.: *Vet. Rec.* 1974, **89**, 61. Zerobin K., Spürri H.: *Adv. vet. sci. comp. med.* 1972, **16**, 321. Zerobin K.: *Proc. Congr. I.P.V.S.* 1980.