P-11

Superovulation Treatment with PMSG and PG600 in Prepubertal Gilts

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The object of this study was to compare superovulation treatment using PMSG with PG600 and investigate the effects of various duration after hCG for porcine in vivo matured oocytes. A total of 80 prepubertal Yorkshire x Landrace gilts crossed with Duroc, 6 to 7 months old and B.W. 100 to 120kg, were used in this study. The gilts were administrated with 1,500 IU PMSG (DaeSung Microb. Lab., Korea) or 1 vial of PG600 (Intervet, Boxmeer, Netherlands), i.m.. Three days after injection of PMSG or PG600, gilts were treated with 1,000 IU hCG (DaeSung Microb. Lab., Korea) i.m.. Ovaries were examined according to their morphology based on populations of surface antral follicles. The follicles were classified as large follicles group (4-8 mm in diameter) and small follicles group (1-3 mm in diameter). Corpus haemorrhagica (CH) were usually counted before flushing to estimate the number of ovulations. The number and diameter of follicles 1 to 8 mm on the ovarian surface were recorded. Oocytes were recovered from oviduct at flushing 44, 46, 48 and 50 hr after hCG treatment. Oocytes were collected with 1-100 $\mu\ell$ pipette tip fixed to a 10 ml disposable syringe from oviduct.

The number of CH, surface antral follicles and recovered oocytes are given in Table 1. The number of CH and recovered oocytes with post-hCG (phCG) 46, 48 and 50 hr in PG600 treated groups were significantly higher than the other group. Group of phCG 50 hr among PMSG treated groups had a greater number of CH and recovered oocytes ($P<0.05$). In conclusions, considering a number of corpus haemorrhagica and recovered oocytes after superovulation in gilts, effective time of treatment with PMSG and hCG was post-hCG 50 hr and with PG600 plus hCG was post-hCG 46, 48 and 50 hr.

Table 1. Recovery of oocytes from prepubertal gilts treated with PMSG/hCG and PG600/hCG

Treatment	Post-hCG (hours)	No. of recipient	No. of CH (range)	No. of follicles (range)		No. of oocytes recovered (range)
				1-3mm	4-8mm	
PMSG +hCG	44	10	8.1 ± 4.0^{a} (0-13)	40.0 ± 6.8^{a} (31-50)	14.6 ± 7.7^{a} (2-26)	7.2 ± 1.3^{a} (5-9)
	46	10	8.5 ± 3.8^{a} (1-13)	34.0 ± 5.6^{b} (27-41)	15.5 ± 6.1^{a} (6-26)	7.9 ± 1.1^{a} (6-9)
	48	10	9.0 ± 2.1^{a} (5-10)	32.4 ± 4.4^{b} (28-39)	17.1 ± 5.2^{ab} (10-23)	8.3 ± 1.2^{a} (7-10)
	50	10	13.9 ± 1.6^{c} (6-31)	17.9 ± 4.9^{c} (11-26)	8.6 ± 2.1^{c} (5-11)	12.5 ± 7.0^{b} (6-30)
PG600 +hCG	44	10	8.3 ± 3.6^{a} (2-13)	35.7 ± 5.6^{ab} (29-46)	19.5 ± 3.4^{b} (15-26)	8.0 ± 1.0^{a} (7-10)
	46	10	13.9 ± 1.6^{c} (9-18)	7.2 ± 8.3^{c} (8-31)	8.4 ± 1.8^{c} (5-11)	12.9 ± 2.4^{b} (9-16)
	48	10	14.4 ± 1.3^{c} (10-31)	16.4 ± 7.8^{c} (4-31)	4.8 ± 2.7^{cd} (0-9)	13.1 ± 1.6^{b} (8-16)
	50	10	14.5 ± 1.3^{c} (6-31)	18.0 ± 5.2^{c} (10-24)	2.5 ± 1.3^{cd} (0-4)	14.4 ± 5.2^{b} (6-32)

^{a,b,c,d} Different superscripts within columns denote significant differences ($P<0.05$)
CH: Corpus Haemorrhagica.