

THE EFFECT OF FSH CONCENTRATION DURING IVM AND GAMETE CO-INCUBATION LENGTH DURING IVF ON THE DEVELOPMENT OF UNSTIMULATED PREPUBERTAL EWE OOCYTES.

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The developmental competence of prepubertal oocytes can be increased by the administration of gonadotrophins prior to oocyte collection (1); but this is not possible with abattoir-sourced oocytes, and modifications to the IVP system may increase in vitro development. Experiments were conducted to determine the effects of FSH concentration (10, 20 or 60 $\mu\text{g mL}^{-1}$) during IVM (5 replicates) and gamete co-incubation length (short: 2-3 h, long: 18-20 h) during IVF (6 replicates) on subsequent embryonic development. For both experiments ovaries were collected from prepubertal lambs (16-24 weeks) slaughtered at an abattoir and embryos produced in vitro (1). Data were analysed by chi-squared test. Oocyte cleavage at 48 hours post-insemination (hpi) was higher for oocytes matured in medium containing 20 (60/77; 77.9%) and 60 (56/73; 76.7%) than 10 $\mu\text{g mL}^{-1}$ (40/67; 59.7%) FSH. Blastocyst formation (% cultured oocytes) on Day 7 (Day 0 = IVF) was higher for oocytes matured with 20 (31/77; 40.3%) than 10 (16/67; 23.9%) or 60 $\mu\text{g mL}^{-1}$ (20/73; 27.4%). Oocyte cleavage at 48 hpi was reduced for short (36/57; 63.2%) compared with long (49/55; 89.1%) co-incubation, although blastocyst formation (% cultured oocytes; Day 7) did not differ between groups (22/57; 38.6% and 23/55; 41.8%, respectively). These results demonstrate that increasing the FSH concentration above normal levels during IVM of prepubertal lamb oocytes improves development in vitro. Gamete co-incubation length did not influence the proportion of oocytes progressing to the blastocyst stage.

(1) Morton *et al.* (2003) *Proc. Soc. Reprod. Fert.* P18.