

Acquisition of Ovulatory Capacity in Camel (*Camelus Dromedarius*) Follicles

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We have observed that the selection of a dominant follicle (DF) in camels (*Camelus dromedarius*), is associated with a deviation in the growth rate between the dominant and the largest subordinate follicle. Follicle deviation in camels occurred 3.6 d after ovulation at a DF diameter of 7.2 mm and a largest subordinate follicle diameter of 6 mm. The present study was aimed to determine the diameter at which the largest DF acquires the ovulatory capacity following follicle deviation in camels. The study was conducted in multiparous dromedary camels ($n = 42$) aged between 10 to 18 years, during the peak breeding season (January to March 2011). Ovarian follicular dynamics were monitored by transrectal ultrasonography (LOGIQ P5, GE Health Care, Wauwatosa, WI, U.S.A) on alternate days. Ovulation was induced by the use of a single intravenous injection of 1500 IU hCG (Chorulon, Intervet, EU) in camels with mature DF (1.3 to 1.8 cm in diameter) in the ovaries. Ultrasonographic examination was carried out daily following hCG treatment until the largest DF of a new wave reached a diameter of 7.2 to 9.0 mm (Group I; $n = 12$), 9.1 to 10.9 mm (Group II; $n = 13$) or ≥ 11.0 mm (Group III; $n = 17$). At these stages ovulation was induced by hCG treatment and the DF was monitored every 8 h for 48 h by ultrasonography. Between the different groups the diameter of DF at the time hCG treatment was analyzed by ANOVA with Post-hoc Tukey test and the ovulation rate was analyzed by a chi-square test. Statistical significance was set at $P < 0.01$. No ovulation had occurred in group I whereas all DFs in group III had ovulated. (Table 1). The ovulation rate of DFs in group II was lower than group III. Overall, the interval from hCG treatment to ovulation was 31.7 ± 0.6 h (mean \pm S.E.M). In conclusion, a DF in camels acquired ovulatory capacity when it reached a diameter of 10 mm, and the response to induced ovulation increased significantly as the DF reached a diameter of 11 mm.

Table 1. Diameter of the largest dominant follicle (mean \pm S.E.M) and ovulatory capacity in response to 1500 IU hCG in camels.

	Largest dominant follicle diameter categories (mm)		
	7.2 to 9.0 (Group I)	9.1 to 10.9 (Group II)	≥ 11.0 (Group III)
Number of animals	12	13	17
Largest dominant follicle at the time of hCG (range)	8.2 ± 0.2^c (7.2-9.0)	10.0 ± 0.1^b (9.1-10.9)	11.6 ± 0.1^a (11.0-12.5)
Ovulated animals (%)	0/12 (0)	7/13 ^b (53.8)	17/17 ^a (100.0)

Within a row, means or proportions without a common letter (a-c) differed ($P < 0.01$)

Keywords: Ovulatory capacity; Dromedary camel; hCG; Dominant follicle

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