



Effect of Lubricants Developed for Fertility Markets on In Vitro Fertilization and Embryo Development

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Introduction

Traditional lubricants damage sperm and should not be used while pregnancy is desired. Newer products have been developed for this consumer/patient group. Bovine and human embryos share similar paternal sperm regulatory pathways, making this species a model for detection of sublethal sperm damage (RepBioMedOn 2002;4:170)

Objective

Experiments were done to evaluate in vitro fertilization and embryo development following bull sperm exposure to lubricants developed for the fertility market.

Method

Cryopreserved bull sperm was washed, resuspended in medium and placed into one of 5 treatments. These were: 1) Control medium; 2) Pré® Lubricant (Pré); 3) FertilityCare™ (FC); 4) ConceiveEase™ (CE) or 5) PREConceive plus™ (PC).

Lubricants were mixed with sperm at 10% v/v & incubated for 30 min at body temperature. Then sperm from each treatment was placed into fertilization wells with mature bovine oocytes. At 8 hr, putative zygotes were transferred into development medium and further incubated.

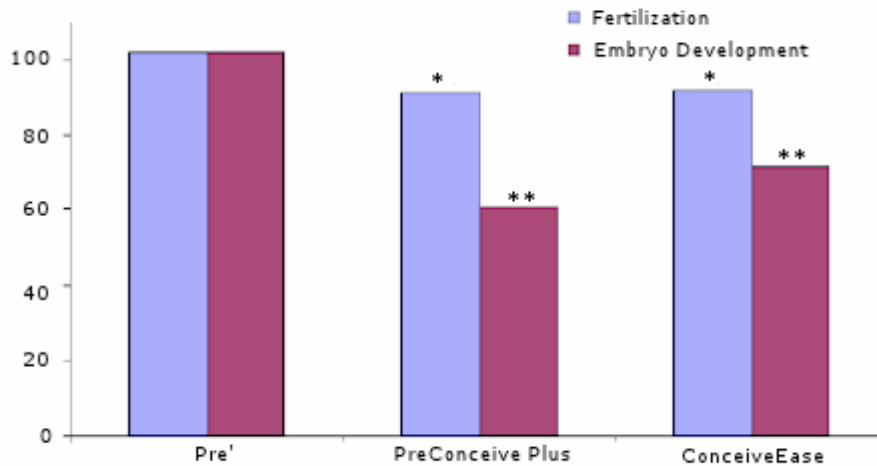
At 32 hr of culture, dividing embryos were counted (% fertilized oocytes)

Results

Embryo development (%) was determined by the number of morulae and blastocysts on Day 7. Friedman's test compared percent fertilization and embryo development in each treatment versus control.



% Fertilization and Embryo Development Compared to Control*



In Vitro Fertilization & Embryo Development

Treatment	Total Oocytes	% Fertilized Oocytes (+sd)	% Embryos Developing (+sd)	p value fertilization / developed
Control	160	63(8)	45(12)	
Pré	160	62(11)	42(5)	0.900 / 0.470
FC	160	53(12)*	28(20)*	0.003 / <0.0001
CE	160	56(9)*	27(16)*	0.033 / <0.0001
PC	160	56(10)*	26(16)*	0.025 / <0.0001

* denotes treatment means differ from control



Conclusion

Sperm contact with Pré did not interfere with fertilization or embryo development, whereas other lubricants caused significant declines in these end points. The reasons for these differences require additional study.

Pré® Lubricant - INGfertility, Valleyford, WA

FertilityCare™ - Marco D'Polo, Ingleburn, NSW, AU

ConceiveEase™ - Sepal, Boston, MAPREConceive plus™ - Lake Consumer Products, Inc., Jackson, WI