Effects of Personal Lubricants on In Vitro Fertilization and Embryo Development

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Use of personal lubricants is not recommended for couples that are trying to conceive based on several studies reporting their deleterious effect on sperm motility. In spite of this, 43% of all trying-to-conceive couples use personal lubricant products due to a high frequency of vaginal dryness. The current study was designed to compare in vitro fertilization and embryo development of bovine oocytes in the presence of moderate doses (10%) of several different products. In vitro matured cow oocytes were fertilized by bull sperm with: 10% KY Jelly; 10% FemGlide (labeled as "sperm compatible"); 10% Pre~Seed (a new moisturizer developed to provide an optimal sperm environment); and control TALP IVF media. Lubricants were only present during the fertilization incubation of sperm and oocytes. The bovine IVF model allows for detection of sperm DNA damage which can inhibit embryo development. Embryos were cultured for 7 days and then scored for normal development for blastocyst (multi-cell) stage. Data are expressed as Mean (SEM).Treatment

	# Oocytes	% Fertilized	% Blasts
KY Jelly	100	12 (2.0)a	2 (1.2)a
FemGlide	200	72 (3.4)b	42 (0.7)b
PreSeed	200	73 (4.6)b	47 (0.9)c
Control	200	77 (3.4)b	44 (0.8)b,c

KY Jelly in the fertilization medium had a very negative effect on fertilization and development (a,c differ by $p<0.001$), with only 2% of all eggs developing to the blastocyst stage. FemGlide decreased embryo development as compared to the Pre~Seed treated sperm (b,c differ by $p=0.05$). Pre~Seed® did not affect embryo development as compared to the control media in this model, in fact a trend for improved development was seen. Mouse embryo development studies with 10% volume of test product are routinely done as a toxicology screen for assisted reproduction media. A similar design, using cow embryos detected a harmful effect of KY Jelly and FemGlide on embryo development after sperm exposure to these products.