EFFECT OF MATERNAL HEAT- STRESS ON OOCYTE QUALITY AND *IN VITRO* COMPETENCE IN *Bos indicus* CATTLE

Torres-Júnior, J.R.S.[1]; Pires, M.F.Á.[2]; Sá, W.F.[2]; Ferreira, A.M.[2]; Viana, J.H.M.[2]; Camargo, L.S.A.[2]; Ramos, A.A.[2]; Folhadella, I.M.[2]; Polisseni, J.[2]; Freitas, C.[2]; Clemente, C.A.A.[2]; Sá Filho, M.F.[1]; Souza, A.H.[1]; Martins, C.M.[1]; Baruselli, P.S.[1]

[1]Animal Reproduction Department, FMVZ/USP, Sao Paulo-SP; [2]Dairy Cattle Research Center, EMBRAPA, Juiz de Fora-MG. barusell@usp.br

Ten Gir (*Bos indicus*) cows were kept in *tie-stalls* for an adaptive period of 28 days (Phase I/ before-trial period/ days -28 to -1). Cows were submitted to two OPU (ovum pick up) rounds (days -14 and -7). In Phase II (trial period/ days 0 to 28), cows were divided in Control (**GC**/n=5) and Stress (**GS**/n=5). The **GC** remained in normal temperatures, and the **GS** was kept under heat stress in climatic rooms with controlled temperature and humidity [38°C and 80%UR (DAY); 30°C and 80%UR (NIGHT)], for 28 days, and during this phase five rounds of OPU/cow/group. In Phase III (post-trial/ days 28 to 147) all cows returned to normal environmental temperatures. Then, 17 rounds of OPU/cow/group were performed. At the time of each round of OPU (once a week), with the use of an ultrasound (Scanner 200s) equipped with a setorial intravaginal probe of 7,5 MHz, the follicles in the ovary, and the diameter (Ø) of the two biggest follicles were evaluated. Subsequently, all follicles ³ 3mm were aspirated and the oocytes were morphologically evaluated, selected, maturated, fertilized, and cultivated for seven days for evaluation of the embryo production *in vitro*. The residue distribution was analyzed and data transformation was performed in non-normal distributions. Variables were analyzed with ANOVA and Chi-Square test. Conclusions were made based in a significance level of 5%. One animal was excluded from GS after sixth session, having remained 125 versus. 107 OPU sessions for groups GC and GE respectively. It was detected a number of visualized follicles and recovered oocytes by OPU round. The averages for GC vs. GS groups, in Phases I, II and III, were, respectively: **Visualized follicles** (25.5±2.5 vs. 28.5±2.8; 24.2±1.1 vs. 24.0±1.9; 15.3±0.6 vs. 15.8±0.8); **Follicles <6mm** (23.9±2.4 vs. 26.9±3.1; 22.6±1.1 vs. 22.1±2.0; 13.8±0.7 vs. 13.6±0.8); **Follicles with 6-9 mm** (0.5±0.2 vs. 0.5±0.2; 0.5±0.1 vs. 0.4±0.1; 0.5±0.1 vs. 0.6±0.1); **Follicles >9mm** (1.1±0.2 vs. 1.0±0.4; 1.0±0.2 vs. 1.5±0.1; 1.0 ± 0.1^{b} vs. 1.6 ± 0.1^{a}); **Ø biggest follicle** (12.1±1.5 vs. 11.1±1.7; 13.3±0.8 vs. 13.0±0.6; 11.4 ± 0.4^{b} vs. 14.0 ± 0.4^{a}); **Ø 2nd biggest follicle** (6.2±1.3 vs. 6.0±1.2; 5.9±0.6 vs. 7.1±0.8; 6.3 ± 0.3^{b} vs. 8.7 ± 0.5^{a}); **Recovered oocytes** (11.2±2.8 vs. 14.3±2.5; 9.6±1.0 vs. 11.0±1.3; 8.6±0.7 vs. 7.9±0.6) **Viable oocytes:** 7.3±2.1 vs. 10.8±1.8; 6.6±1.0 vs. 7.5±1.0; 5.2±0.6 vs. 4.6±0.4; **Viable oocytes rate** [$(69/112\ (61.6\%)^{b}$ vs. $108/143\ (75.5\%)^{a}$; 164/241 (68%) vs. 172/265 (64.9%); vs. 426/712 (59.8%) vs. 305/535 (75.0%)]; **Cleavage rate** [44/59 (74.5%) vs. 87/105 (82.9%); 72/101 (71.3%) vs. 74/121 (61.2%); 226/317 (71.3%) vs. 159/230 (69.1%)]. Embryos per cow/OPU**:** 2.1±1.1 vs. 4.1±1.0; 0.4±0.3 vs. 0.5±0.3; 0.9 ± 0.2^{a} vs. 0.4 ± 0.1^{b} and; **Blastocyst forming rate** [16/59 (27.1%) vs. 33/105 (31.5%); 11/31 (35.5%) vs. 13/52 (25.0%); $76/279\ (27.2\%)^{a}$ vs. $25/\ 188\ (13.3\%)^{b}$]. The heat stress in the donor cow significantly decreased the number of embryos produced from *Bos indicus* cows, mainly from 28 to 147 days post-stress. In addition, the mechanical effect of prolonged successive follicular aspirations can interfere in the number of visualized follicles and the number of oocytes recovered.
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