ORAL COMMUNICATIONS

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  The nonconformist: conceptus-maternal communication in the dog

• SYMPOSIUM 2
  Devising new gonadotropins for the future... which strategies, which uses?

• SYMPOSIUM 3
  Cloning and genome editing

• SYMPOSIUM 4
  New aspects of corpus luteum regulation toward successful pregnancy

• WORKSHOP 5
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• SYMPOSIUM 5
  Reproduction in non-domestic and endangered species

• SYMPOSIUM 6
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• SYMPOSIUM 7
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  Cryopreservation: freezing, vitrification, freezing drying

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  New imaging systems for assessing gamete and embryo quality

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  Novel insights on uterine immunology during pregnancy and disease
The high viscosity of alpaca semen obtained through artificial vagina makes laboratory handling difficult, for this reason, are used different methods allow viscosity elimination of seminal plasma in alpacas. Has been proved that these methods can affect the structure and functionality of spermatozoa, but not if exist an increase of reactive oxygen species production and hence oxidative stress. This study aimed to evaluate the effect of three seminal plasma viscosity elimination methods on oxidative stress in alpaca spermatozoa.

METHODS

Ten ejaculates of alpaca obtained by artificial vagina coupled on a dummy were employed in this study. Each sample was divided into three aliquots for the assessment of Mechanic Method (MM), Centrifugation (C), and Enzymatic Digestion (ED) with Papain and E-64. After treatments, flow cytometry was used to evaluate sperm viability (SYBR14/PI), mitochondrial membrane potential (MitoTracker Deep Red FM), lipid peroxidation (BODIPY® SR/110), and mitochondrial superoxide production (MitoSOX™ Red). Sperm motility was also assessed. The effect of the methods on the percentages of motility, sperm viability, mitochondrial membrane potential, lipid peroxidation, and mitochondrial superoxide production were evaluated using a one-way ANOVA.

RESULTS

Percentages of sperm motility, sperm viability, and mitochondrial membrane potential, were higher on samples treated with the ED method compared to the other two techniques.

CONCLUSIONS

We conclude that treatment with Papain and E-64 (Enzymatic Digestion) for the elimination of seminal plasma viscosity in alpacas is better than mechanic method and centrifugation because produces between 10 to 20% less oxidative stress, respectively.

The aim of this study was to evaluate the effect of a synthetic eCG like glycoprotein on follicular development and embryo production, as an alternative to native eCG in llamas.

METHODS

Twenty non-gestationing and non-lactating llamas were examined daily by transrectal ultrasonography (tUS) to assess ovarian status (MyLab One Vet, ESAOTE) until a growing follicle with a diameter ≥7 mm, considered ovulatory in this species, was observed. At that moment, females received 8 μg of a GnRH analog (IV) (buserelin acetate, Gonazal®, Biogénesis Bagó, Argentina) (Day 0). On Day 7, all llamas were injected with 112.5 μg of cloprostenol (IM) (Enzaprost®, Biogénesis Bagó). On Day 10, the number of ovulatory follicles were determined by tUS and then llamas were mated with a male with proven fertility. Afterwards, females were injected with 8 μg of buserelin acetate (IV) and 24 h later, natural mating was repeated with another male, in order to minimize the male effect. On Day 18, the number of corpus luteum (CL) that developed after mating between groups were compared by t-test. The number of CL that developed after mating between groups were compared by Mann-Whitney test. The number of ovulatory follicles were determined by tUS and then llamas were mated with a male with proven fertility. Afterwards, females were injected with 8 μg of buserelin acetate (IV) and 24 h later, natural mating was repeated with another male, in order to minimize the male effect. On Day 18, the number of corpus luteum (CL) that developed after mating were assessed by tUS and then embryo recovery was performed by uterine flushing. The number of follicles that developed after treatment and the number of collected embryos between groups were compared by Mann-Whitney test. The number of CL that developed after mating between groups were compared by Mann-Whitney test. Values are expressed as mean ±SEM.

RESULTS

No significant differences were observed between groups in the number of ovulatory follicles observed on Day 10 (10.5±2.9 vs. 8.4±1.3 in the eCG-N and eCG-R, respectively), nor in the number of CL that developed after mating (9.2±3 vs. 8.2±1.2 in the eCG-N and eCG-R, respectively). The number of collected embryos did not show significant differences between groups (2.6±1.1 and 3.3±1.1 in the eCG-N and eCG-R, respectively).

CONCLUSIONS

The synthetic eCG like glycoprotein shows a similar effect with regards to follicular development and embryo collection than the native eCG.