Investigation of the Effects of Iodixanol During Equine Semen Cryopreservation

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Cushion centrifugation with iodixanol-based media has become popular and may have a beneficial effect on sperm chromatin preservation during cryopreservation. Authors’ addresses: Department of Veterinary Clinical Sciences, School of Veterinary Medicine, Skip Bertman Drive, Louisiana State University, Baton Rouge, LA 70803 (Beehan, Lyle, Eilts, Len); and Large Animal Clinical Sciences, 500 Raymond Stotzer Parkway, College Station, TX 77845 (Love); e-mail dbeehan@lsu.edu. *Corresponding and presenting author. © 2012 AAEP.

1. Introduction
There are a number of commercially prepared iodixanol cushion media available for semen centrifugation. Studies in the bull demonstrate a protective effect of iodixanol residues during cryopreservation. We hypothesized that using an iodixanol cushion medium during the processing of equine semen for cryopreservation would improve post-thaw parameters.

2. Materials and Methods
Three ejaculates from each of 6 stallions were used (n = 18 ejaculates). After cushion-free centrifugation, ejaculates were cryopreserved with 0%, 2.5%, and 5% iodixanol (vol/vol) freezing extender preparations. Analysis of samples was by binomial logistic regression for total motility (TM), progressive motility (PM), and COMP

3. Results
The mean (±SE) TM results for 0%, 2.5%, and 5% were 31.93% ± 3.1%, 28.1% ± 2.9%, and 30.4% ± 3.1%, respectively. The mean (±SE) PM results for 0%, 2.5%, and 5% were 23.72% ± 3.23%, 20.19% ± 2.87%, and 21.94% ± 3.04%, respectively. The TM and PM of 0% iodixanol treatment was significantly greater than 2.5% iodixanol, but neither was significantly different from 5% iodixanol. The mean (±SE) COMP

4. Discussion
It appears that the presence of iodixanol during cryopreservation may have a beneficial effect by protecting sperm chromatin, but the exact mechanism of action is unknown and warrants further study.