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TITLE

ABSENCE OF BOVINE VIRAL DIARRHEA VIRUS EFFECT ON THE SEMINAL QUALITY OF EXPERIMENTALLY INFECTED BOARS

Gabriel Yuri Storino¹, Marina Lopes Mechler-Dreibi¹, Eduarda Bellini Xavier¹, Artur Simonatto Fioroto¹, Igor Renan Honorato Gatto¹, Maria Emilia Franco Oliveira¹, Luís Guilherme de Oliveira¹

¹ *São Paulo State University (Unesp), School of Agricultural and Veterinarian Sciences, Jaboticabal, São Paulo, Brazil*

CONTENT

Background and objectives: Viral infections in pigs may result in loss of reproductive performance because they can affect factors related to seminal quality. The aim of the present study was to promote the experimental infection of boars with BVDV-2a and evaluate the viral shedding by the reproductive pathway, as well as the effects of infection on the seminal quality. Material and Methods: Six two years old boars were inoculated with a total of 11.5 ml of BVDV-2a noncytopathic strain LVB 16557/15, titrated $1 \times 10^{5.5}$ TCID₅₀ / ml by oral, nasal, intramuscular and intravascular routes. From inoculated boars were collected samples of semen, preputial swab and blood for RT-PCR every four days from day (D)-16 to D52, with inoculation on D0. The semen collected was evaluated for total motility, vigor, agglutination, sperm concentration, membrane integrity, and total defects. Results: No clinical signs were observed in any of the inoculated males. The only parameter that presented differences over the period evaluated was the percentage of total defects between D-12 ($5.5a \pm 2.5\%$); D-8 ($5.2a \pm 2.1\%$) and D40 ($1.0b \pm 0.8\%$); D44 ($1.5b \pm 0.5\%$) by Friedman's test ($p < 0.05$). It was not detect BVDV-2 viral RNA in any sample collected throughout the experimental period. Discussion and Conclusion: The observed results suggest that BVDV-2a strain LVB 16557/15 has no relevance on reproductive performance. The occurrence of total defects was higher in the pre-inoculation period and it is not related to infection. The observation of significant changes in factors related to seminal quality might be associated with infections caused by other pestivirus species more virulent, like Classical Swine Fever Virus and Atypical Porcine Pestivirus Virus, or even strains of BVDV-2 that are more adapted to the swine host. Grants #2017/00950-0 and #2016/21421-2, São Paulo Research Foundation (FAPESP).