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FOLLICULOGENESIS, OOGENESIS AND SUPEROVULATION

Treatment of chronic cystic ovarian disease with deslorelin: preliminary results

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Cows used as oocyte donors may develop chronic cystic ovarian disease (COD), characterized by the presence of multiple large follicles and refractoriness to conventional treatments (Faria *et al.* Anim Rep. 2017). Our group has previously demonstrated that such COD conditions may be treated by vaccination against GnRH. The main flaw of this approach, however, is the lack of control of the duration of immunization. We therefore hypothesized that the same effect can be obtained using a long-acting GnRH agonist. In the current study, we evaluated the effect of deslorelin implants (Suprelorin, Virbac) on ovarian activity in cows with COD. Nelore donors previously diagnosed with the disease ($n = 16$) were randomly allocated into four groups, which received: no treatment (control group, G0), or one (G1), two (G2), or three (G3) sc implants with 4.7 mg deslorelin. Ovaries were scanned weekly by ultrasonography and videoclips were stored for further measurement of all visible follicles and luteal tissue present. We recorded the size of the largest follicle, as well as the number of follicles above the expected size of the dominant follicle at deviation ($>8\text{mm}$) and at ovulation ($>12\text{mm}$), antral follicle count (AFC), and the presence of mucometra. Data were analyzed using the Glimmix procedure of SAS, with a statement for repeated measures. Before treatment, all cows presented a cystic follicle ($21.2 \pm 0.1\text{mm}$), with an average 2.6 ± 0.4 follicles larger than 12 mm and 4.9 ± 0.9 larger than 8 mm. We observed the so-called “flare-up” effect after treatment, which in the current study was characterized by the luteinization of follicular cysts in the treated groups and therefore a greater ($P < 0.05$) amount of luteal tissue during weeks 1 and 2 in groups G1, G2, and G3, compared with the control group (G0). There were treatment, time, and treatment x time effects ($P < 0.02$) on all endpoints related to follicle size. In the cows receiving deslorelin implants (G1, G2, and G3), we observed a decrease ($P < 0.05$) on the size of the largest follicle and on the number of follicles larger than 12 mm from week 4 onwards, compared with G0. On group G3, no follicular cysts were observed from week 7 onwards. The number of follicles larger than 8 mm, however, only differed ($P < 0.05$) from G0 in G2 and G3, and from week 6 onwards. On the other hand, there was no effect ($P > 0.05$) of deslorelin treatment on AFC or on mucometra score. In summary, the preliminary results suggest that two sc implants (total 9.4 mg) of deslorelin can be used as a therapeutic alternative for the treatment of oocyte donors with COD.

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