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VALUTAZIONE DELL’EFFICACIA DI DUE DIFFERENTI DOSI DI OSSITOCINA SULLA CLEARANCE DEI FLUIDI UTERINI NELLA FATTRICE

EVALUATION OF THE EFFICACY OF TWO DIFFERENT DOSES OF OXYTOCIN ON UTERINE FLUID CLEARANCE IN MARES

Amanda Bliss* FdSc; Madeleine Campbell# BVetMed(Hons), MA(Oxon), PhD, DipECAR, MRCVS.
*University of Brighton, Brighton
#Hobgoblins Equine Reproduction Centre, Duddleswell

Introduction (purpose of the work). The purpose of this study was to determine the clinical effectiveness of two common dosages of oxytocin in treating post-breeding endometritis. The intraluminal fluid which collects in this situation results in an environment which is not suitable for embryonic development (Pycock, 2006), and may require intervention to improve the chance of conception. Administration of exogenous oxytocin is one common method of aiding mechanical clearance of uterine fluid which improves pregnancy rates (Pycock and Newcombe, 1996; Rasch et al, 1996). However, varying methods and dosages are used in clinical Practice. The present study examined the effectiveness of 20 or of 30 IU of oxytocin administered intravenously at clearing fluid from the uterus.

Methods (used methods). 23 mares of varying breeds were examined ultrasonographically to determine maximum uterine fluid depth (cm) post-breeding immediately prior to, and thirty minutes after, intravenous (iv) administration of either 20 or 30 IU of oxytocin. The half-life of exogenous oxytocin in mares is 6.8 minutes (Paccamonti et al, 1999), with 90% of fluid clearing within 15-30 minutes of treatment (Cadario et al, 1999). Dosages were randomly assigned to each mare, resulting in a mean dosage of 0.047 ± 0.003 iu/kg oxytocin for the 10 mares in the 20 IU group, and of 0.061 ± 0.002 iu/kg oxytocin for the 13 mares in the 30 IU group. Statistical analysis was performed using matched pairs Student’s t-tests, with significance set at p < 0.05.
**Results (obtained outcomes).** Maximum depth of uterine fluid measured was significantly reduced (p<0.001) post-treatment for both the 20 and the 30 IU groups.

**Conclusions.** The results of this study suggest that both commonly used doses of 20 and 30 IU of oxytocin when administered intravenously for treatment of post-breeding endometritis significantly reduce the depth of fluid in the uterus. It has been previously found (Campbell and England, 2002) that dosages of 30 IU could lead to a reduction in the number of uterine contractions. The work of Cadario et al. (1998) suggested that a dosage greater than 20 IU might lead to a tetanic uterine contraction, resulting in impaired fluid clearance upon cessation of uterine contractility. No such reduction in fluid clearance was demonstrated in the present study using a 30 IU dose. The work of Campbell and England (2002) administered the treatment to reproductively normal pony mares using a dosage equivalent of 0.064 iu/kg for a 20 IU dose, and 0.0978 iu/kg for a 30 IU dose. For the purposes of the present study, it was determined that administering these equivalents to a mare of 450 kg would have resulted in a dosage of 32 IU and 49 IU respectively, which might have resulted in adverse side-effects in non-experimental animals. For this reason, standard doses of 20 IU and 30 IU (commonly used in clinical practice) were used for all mares, regardless of bodyweight. Studies are currently being undertaken to determine whether treatment with 10 IU oxytocin will produce a significantly different effect. A dose of 20 IU significantly reduces the depth of intra-uterine fluid in mares suffering post-breeding endometritis, and is likely to result in reduced side effects compared to a 30 IU dose, which also significantly reduces the depth of fluid.

**Bibliography**


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Indirizzo per la corrispondenza/Address for correspondence:

Amanda Bliss, Hobgobline Stud, Duddleswell, Ashdown Forest, East Sussex, TN22 3BH, UK.

E-mail: a.karoly@brighton.ac.uk

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