

Clinical Use of Intracytoplasmic Sperm Injection in Horses

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When sperm quality is poor or sperm numbers are limited, intracytoplasmic sperm injection (ICSI) can be used to obtain pregnancies. Authors' address: Equine Reproduction Laboratory, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO 80523. © 2007 AAEP.

1. Introduction

During intracytoplasmic sperm injection (ICSI), a single sperm is injected into an oocyte. There has been limited clinical use of ICSI in the horse. Our objectives were to retrospectively review the contributing factors and results of a clinical ICSI program.

2. Materials and Methods

During the 2006 breeding season, oocytes were collected from pre-ovulatory follicles of donor mares ranging in age from 4 to 26 yr. Semen was processed using a swim-up procedure. Frozen, cooled, and epididymal sperm was injected into oocytes. Sperm injections were done using a micromanipula-

tor. Injected oocytes were cultured in vitro until cleavage, and early embryos were transferred into recipients' oviducts.

3. Results and Discussion

From 91 normal oocytes, 62 (68%) cleaved into at least two cells. Embryos were transferred 34 ± 1.2 h after ICSI, and there were 3.3 ± 0.2 cells per embryo (means \pm SEM). Per transferred embryo, pregnancy rates at 16 and 50 d were 44% (27/62) and 31% (19/62), respectively; the type of sperm injected had no effect on the outcome. Using ICSI, 24 late-term pregnancies were produced for stallions with poor-quality semen or limited sperm numbers.

Research Abstract

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