Randomized comparison of different ovarian stimulation regimens for assisted reproductive technology in baboons (Papioanubis)

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Abstract

Objective To compare different methods of ovarian stimulation (OS) for assisted reproductive technology in baboons. Design Prospective randomized study. Setting Institute of primate research. Animal(s) Baboons (n = 10) were randomized into two groups (of five animals each) during three different cycles to compare six protocols of OS. Intervention(s) Cycle 1: clomiphene citrate (CC) alone (group CC) versus CC and GnRH agonist (group CC-Ag); cycle 2: recombinant gonadotropins (GON) without GnRH agonist (group GON) versus GON and depot GnRH agonist (group GON-AgDepo-1); cycle 3: GON and depot GnRH agonist (group GON-AgDepo-2) versus GON and daily GnRH agonist in a classic long protocol (group GON-Ag). Oocyte aspiration was performed 34–36 hours after injecting 5,000 IU rhCG, followed by fertilization via intracytoplasmic sperm injection (ICSI). Main Outcome Measure(s) Number and quality of oocytes retrieved and their fertilization rate. Result(s) More metaphase II (MII) oocytes were retrieved using the GON-AgDepo-1 (n = 12; 64% MII), GON-AgDepo-2 (n = 9; 79% MII), GON-Ag (n = 16; 88% MII), and GON (n = 6; 59% MII) protocols compared with the CC (n = 9; 15% MII) and CC-Ag (n = 14; 20% MII) protocols. Fertilization by ICSI varied between 43% and 71%. Conclusion(s) In baboons, long and depot protocols yield similar numbers of MII oocytes; however, depot protocol may be preferable because only one injection of GnRH agonist is needed.