

FERTILITY AND STERILITY

Volume 71, Issue 5, Pages 825-829 (May 1999)

Low-dose aspirin treatment improves ovarian responsiveness, uterine and ovarian blood flow velocity, implantation, and pregnancy rates in patients undergoing in vitro fertilization: a prospective, randomized, double-blind placebo-controlled assay

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Received 30 October 1997; revised 18 December 1998; accepted 18 December 1998.

Objective: To determine the effects of low-dose aspirin on ovarian response, uterine and ovarian blood flow velocity, and implantation and pregnancy rates in patients undergoing IVF.

Design: Prospective, randomized, double-blind placebo-controlled assay.

Setting: Department of Reproductive Medicine, CER Medical Institute, Buenos Aires, Argentina.

Patient(s): Two hundred ninety-eight infertile patients (mean [+/- SD] age, 35.6 +/- 4.09 years) undergoing IVF cycles.

Intervention(s): In the treatment group, 149 patients underwent controlled ovarian hyperstimulation and received a daily dose of 100 mg of aspirin. In the control group, 149 patients underwent controlled ovarian hyperstimulation in association with placebo.

Main Outcome Measure(s): Number of follicles, number of oocytes retrieved, serum E2 levels, uterine and ovarian pulsatility index, cancellation rate, number of embryos transferred, and implantation and pregnancy rates.

Result(s): There were statistically significant differences between the treatment group and the control group, respectively, in the number of follicles (19.8 +/- 7.2 versus 10.2 +/- 5.3), number of oocytes retrieved (16.2 +/- 6.7 versus 8.6 +/- 4.6), serum E2 levels (2,923.8 +/- 1,023.4 versus 1,614.3 +/- 791.7 pg/mL), uterine pulsatility index (1.22 +/- 0.34 versus 1.96 +/- 0.58), ovarian pulsatility index (1.18 +/- 0.31 versus 1.99 +/- 0.56), pregnancy rate (45% versus 28%), and implantation rate (17.8% versus 9.2%).

Conclusion(s): Low-dose aspirin treatment significantly improves ovarian responsiveness, uterine and ovarian blood flow velocity, and implantation and pregnancy rates in IVF patients.