**Abstract**

**Objective:** To investigate the effect of dehydroepiandrosterone (DHEA) on the outcome of in vitro fertilization (IVF) in patients with endometriosis (EMT).

**Methods:** Female patients diagnosed with EMT in our hospital from May 2018 to May 2019 were selected. The patients were divided into the control group (n = 22) and the DHEA group (n = 22) according to the random number table. Patients in the control group received placebo and patients in the DHEA group received DHEA. Patients in both groups received either DHEA (25 mg) or placebo orally 3 times a day for 90 days from the first day of menstruation. Patients were subsequently treated with an IVF cycle. In the control group, 22 patients completed the first cycle and 13 patients completed the second cycle. In the DHEA group, 22 patients completed the first cycle and 11 patients completed the second cycle. Serum sex hormone levels including serum E2 on hCG day, mean progesterone on hCG day, FSH on day 2, AMH on day 2, and gonadotropin dose were determined using a chemiluminescent immunoassay kit. The number of antral follicles of the bilateral ovaries was counted by transvaginal B-ultrasound, and the maximum length and transverse diameter of the ovaries were measured at the same time, to calculate the average diameter of the ovaries, observe the morphology of endometrium, and measure the thickness of the endometrium. The implantation rate, clinical pregnancy rate, persistent pregnancy rate, and live birth rate were compared between the two groups.

**Results:** There were no significant differences in serum E2, progesterone, endometrial thickness, recovered oocytes, mean number of transferred embryos, and mean score of leading embryo transfer between the DHEA group and the women who completed the first and second cycles (P > 0.05). The AMH, antral follicle count, serum E2 on hCG day, the number of recovered oocytes, fertilized oocytes, and the fertilization rate in the DHEA group were higher than those in the control group (P < 0.05). The doses of FSH on day 2, COH on day 3, and gonadotropin were lower than those in the control group (P < 0.05). There was no significant difference in the total number of embryos, the number of high-quality embryos, and the number of transplanted embryos between the two groups (P > 0.05). The implantation rate, clinical pregnancy rate, persistent pregnancy rate, and live birth rate in the DHEA group were higher than those in the control group (P < 0.05).

**Conclusion:** DHEA can significantly increase serum E2 level and improve IVF outcome by regulating the hormone synthesis process, thus improving oocyte and embryo quality.