Role of Dehydroepiandrosterone in Assisted Reproductive Programme in Singapore General Hospital: A Prospective Observational Study

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Abstract

The impact of DHEA on pregnancy outcome was observed in 21 women undergoing a second IVF cycle after having a poor ovarian response and an unsuccessful pregnancy outcome in a preceeding IVF cycle in the same centre. There was a trend of improvement of ovarian reserve in FSH and AFC measurements between the 2 cycles after 3 months of DHEA treatment but there was no statistical significance. Pregnancy outcome was 10% per embryo transfer but only 1 livebirth occurred in this cohort. No serious side effects were observed.

Objectives

Our primary objective is to evaluate the possible positive effect of DHEA supplementation in women with diminished ovarian reserve as well as those women who were identified poor responders during assisted reproductive programmes. The secondary objectives are to correlate this effect with any positive pregnancy outcomes after one repeat IVF cycle. In addition, we also assessed any potential side effects of DHEA.

Methods

A prospective observational analysis was conducted in our fertility centre, offering a 3-month oral DHEA treatment (25 milligrams once daily) to 21 Asian women who had an unsuccessful outcome in at least one cycle of assisted reproduction (in-vitro fertilisation, IVF). Response was monitored using serum levels of follicle-stimulating hormone (FSH) and ultrasound measurements of antral follicle count (AFC) (on day 2 of cycle) after completion of the 3-month intake of DHEA and compared with the respective values before the last IVF cycle. Any potential side effects were also reported.

Results

The impact of DHEA on pregnancy outcome was observed in 21 women undergoing a second IVF cycle after having a poor ovarian response and an unsuccessful pregnancy outcome in a preceding IVF cycle in the same centre. The mean FSH levels measured after treatment with DHEA was 8.1 ± 2.2 mIU/ml as compared to prior to treatment of 9.9 ± 4.3 mIU/ml, but this decrease was not statistically significant (p= 0.219). There was an increase in the mean AFC between pre-DHEA (7.7 ± 3.0) and post-DHEA (9.7 ± 4.2) cycles but this result was again not statistically significant (p= 0.165). The mean number of oocytes obtained during IVF were also compared between pre-DHEA and post-DHEA cycles. There were a mean of 5.5 ± 3.2 oocytes in the pre-DHEA group versus 7.0 ± 4.0 oocytes in the post-DHEA group (p=0.21). There appeared to be a trend of improvement of ovarian reserve in FSH and AFC measurements between the 2 cycles after 3 months of DHEA treatment but these were not statistically significant. Pregnancy outcome was 10% per embryo transfer but only 1 livebirth occurred in this cohort. No serious side effects were observed.

Conclusion

Many strategies have been used to reverse the effect of the poor pregnancy outcome of poor responders but there have been no uniform consensus on any particular treatment. Therefore, more studies involving larger populations are required to evaluate the potential of DHEA supplementation in improving the outcomes of women with poor or diminished ovarian reserve.

References

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