

Administration of DHEA augments progesterone production in a woman with low ovarian reserve being transplanted with cryopreserved ovarian tissue

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We read with interest the paper of Strauss et al. [1] describing a patient that following transplantation of ovarian tissue for fertility preservation, exhibited increased circulating progesterone concentrations during DHEA supplementation. Since the patient was menopausal at the time of transplantation, and had only a small fraction of ovarian tissue transplanted, the authors attributed the increase in progesterone production to an augmented adrenal synthesis of progesterone.

We have previously described [2] a similar phenomenon in patients with diminished ovarian reserve (DOR) undergoing controlled ovarian stimulation (COS) prior to IVF. In a case control study, we compared progesterone levels during the follicular phase in IVF cycles before and during DHEA supplementation in 15 women with DOR who received 75 mg of DHEA daily. Progesterone levels on stimulation day 5 (ng/mL) (0.58 ± 0.29 vs. 1.54 ± 0.49 ; $p < 0.0001$); and on the day of hCG administration (0.75 ± 0.31 vs. 1.87 ± 0.49 ; $p < 0.0001$) were significantly higher during DHEA treatment. The number of retrieved and fertilized oocytes was similar in both groups. Five patients (33 %) had a clinical pregnancy following DHEA supplementation, of whom 2 had spontaneous abortions and 3 delivered healthy newborns. We concluded that DHEA administration during IVF cycles in women with DOR causes a significant

elevation of progesterone levels without an apparent deleterious effect on cycle outcome.

The mechanism for the observed increase in progesterone levels during DHEA supplementation remains unknown. Altered adrenal and/or ovarian function as well as alterations in steroidogenic pathways that favor progesterone production could all be implicated. In addition, the possibility of cross reaction between DHEA and progesterone in currently available commercial assays should also be explored. More information and further studies are needed in order to increase our understanding of the effects of DHEA supplementation on reproductive function and outcome.

References

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Capsule Elevated circulating progesterone concentrations are observed during DHEA supplementation.

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