

Vitamin D level in women with anovulatory dysfunction

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Vitamin D one of important factors in maintaining calcium and phosphorus metabolism and promoting bone mineralization.

There are some data that Vit D has also modulates reproductive processes in women and men and influence to reproductive outcomes in IVF (clinical pregnancy rate).

But Vit D receptors has been founded in various tissues of female organism such as ovaries, human placenta, pituitary gland and endometrium. It means that it influence on metabolic processes there.

So calcitriol promotes calcium transport in the placenta, stimulates placenta lactogen expression and influence for the development of the uterus and endometrial development and uterine receptivity to implantation

Also Vit D level can influence to human reproduction including IVF outcome, PCOS, and endometriosis as well as on steroidogenesis in healthy women Vitamin D and fertility in humans.

There is some suggestion that vitamin D deficiency might be involved in the pathogenesis of insulin resistance and the metabolic syndrome in PCOS. But it is less clear how vitamin D is related to endocrine parameters and fertility in PCOS.

There are several studies which showing correlation between low 25(OH)D status with features of PCOS. They observed a correlation of 25(OH)D levels with testosterone and DHEAS levels and the LH/FSH ratio.

This data was proven by another study showing an association of vitamin D with SHBG and hirsutism score but not with testosterone and free testosterone.

Endometriosis is also associated with infertility. The pathogenesis of endometriosis is related to an impairment of immunologic mechanisms and inflammatory responses. There is only few data related endometriosis and Vit D status. But Vit D is an effective regulator of the immune system and also VDR and 1 α -hydroxylase are expressed in the endometrium. So Vit D deficiency may influence to reproductive outcomes in IVF.

Also the potential lowering effect of vitamin D on estradiol and progesterone levels might partly explain this association and deserves further investigation

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