



## Effects of Serum 25-Hydroxyvitamin D concentration on Insulin Resistance and IVF-ET outcomes in PCOS

Kun Liu <sup>a</sup>, César Martin Plagaro <sup>b</sup>, Bairong Shen <sup>c</sup>

<sup>a</sup> Reproductive Medicine Center of Lanzhou University First Hospital, Lanzhou , 730030, China

<sup>b</sup> Biochemistry and Molecular Biology Department, University of the Basque Country UPV/EHU, 48940, Leioa, Biscay, Spain.

<sup>c</sup> Institutes for Systems Genetics, West China Hospital, Sichuan University, Chengdu, 610000, China

### Graphical Abstract

None

### Abstract.

**Objective** To explore the potential effects of serum 25-hydroxyvitamin D on insulin resistance and IVF pregnancy outcomes in the patients with polycystic ovarian syndrome (PCOS). **Methods** The patients with PCOS were divided into vitamin D deficiency (VDD) group and sufficient group according to the concentration of serum vitamin D on GnRHa administered day. To compare and analyze the relationship between 25(OH) D and indicators of insulin resistance and secretion function in patients, and effects on pregnancy outcomes. **Results** VDD group was more prone to have high blood glucose 1 h post-meal, hyperinsulinemia and insulin resistance, but with significantly lower ISIcomp ( $P < 0.05$ ). G60 and time-glycemic AUC has predictive value on VDD in PCOS. Vitamin D sufficient is in favor of improving the quality of embryos ( $r = 0.3$ ,  $P = 0.014$ ), but does not affect IVF pregnancy outcomes. **Conclusion** Vitamin D deficiency was prevalent in PCOS and they were more likely to have insulin regulatory dysfunction, but it had no effect on IVF pregnancy rate.

**[Key words]** 25-hydroxyvitamin D; insulin resistance; embryo; pregnancy

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