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The Correlation between Serum Vitamin D and Oocyte Quality, Potential of Fertilization and Embryo Development in the Assisted Reproductive Technology (ART) Cases

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ABSTRACT

Background: Vitamin D may aid with menstrual cycle restoration, endometrial proliferation, follicular development, early dysmenorrhea alleviation, and vaginal fibroid reduction, as well as follicular development, early dysmenorrhea relief, and vaginal fibroid reduction. **Objective :** The goal of this study was to see if there was a relationship between 25 (OH). **Methods:** Vitamin D blood levels and oocyte quality, in vitro cleavage success, and embryo quality at in vitro fertilization (IVF) patients. Individuals who got IVF therapy at a specialist facility in Misurata, Libya, between January 2018 and December 2020 were studied retrospectively. Luteinizing Hormone levels (LHs) of the patients were recorded before and after the treatment. All patients participating in the study were administered vitamin D at a dose of 1,500 to 2,000 IU (3 sprays per day) for two months after starting the treatment. **Results:** There was statistically difference between LHs before and after therapy, as well as a strong positive relationship between the two, according to our data. However, there was no statistically difference for oocyte quality, in vitro division success and embryo quality when vitamin D was supplementation. **Conclusions:** Although studies have shown that women with high levels of blood vitamin D have a better probability of conceiving, the impact of vitamin D supplementation on women in infertile marriages has yet to be fully examined. As a result, additional study is needed to see if vitamin D supplementation will help with IVF success.

1. Introduction

Vitamin D was once assumed to be just needed for bone homeostasis, but it has recently been "rediscovered" as a "multitasking vitamin" in addition to being a "bone vitamin." Vitamin D deficiency has been related to some acute and chronic illnesses, including musculoskeletal problems, type 1 and types 2 diabetes,

hypogonadism, polycystic ovarian syndrome, neoplasm, autism, dementia, and cardiovascular disease. [1]

Vitamin D may aid in the restoration of the menstrual cycle and endometrial proliferation, as well as follicular growth, the reduction of initial

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