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25-HYDROXYVITAMIN D STATUS CORRELATION WITH MALE HYPOGONADISM AMONG TYPE 2 DIABETIC PATIENTS

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Background and objective: Several studies reported correlation between hypogonadism and vitamin D deficiency. But most of these studies investigated hypergonadotropic hypogonadism patients. Hypogonadism complicating diabetes was predominately hypogonadotropic reflecting pituitary dysfunction. We evaluated the relationship between vitamin D status with testosterone and gonadotropin deficiency among patients T2DM. Also we aimed to determine the risk factor for male hypogonadism among those patients.

Methodology: We enrolled 95 male T2DM patients in this cross-sectional study. Vitamin D insufficiency was settled as 25(OH) D level <30 ng/mL while deficiency <20 ng/ml.

Result: Testosterone deficiency prevalence in T2DM patients was 41.1% and hypogondotopic hypogonadism prevalence was 87.2%. T2DM patients with hypogonadism had significant lower 25(OH)D levels than patients without hypogonadism. T2DM patients with testosterone deficiency had significant higher prevalence of vitamin D deficiency (61.5 % and 28.6 %) and non-significant higher prevalence of insufficiency (84.6 % and 82.1 %) in comparison with patients without hypogonadism. Vitamin D deficient T2DM patients showed significant lower total testosterone levels, on the other hand Vitamin D deficient diabetic patients showed non-significant lower gonadotropin as compared to those without deficiency. In linear regression analysis, we found that 25(OH)D was a significant predictor of total testosterone levels among T2DM patients. In logistic regression analysis, vitamin D deficiency but not insuficiency was a significant risk factor for male hypogonadism among T2DM patients. All previous results showed a postive correlation between vitamin D and testosterone levels but not gonadotropin.

Conclusion: Diabetic patients with testosterone deficiency had significant lower 25(OH)D levels and higher prevalence of vitamin D deficiency and insufficiency as compared to those without testosterone deficiency. Vitamin D deficient patients had lower testosterone levels but not gondotopin. 25(OH)D was a significant predictor of total testosterone levels. Vitamin D deficiency was a significant risk factor for male hypogonadism in among T2DM patients.

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