

Vitamin D status and its Association with Atherogenic Index of Plasma in Young Subjects with PCOS



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Background

PCOS subjects often suffer from metabolic comorbidities. Atherogenic Index of Plasma (AIP) is a reliable risk marker for CV disease. Vitamin D receptor gene regulates about 3% of the human genome and Vitamin D deficiency is considered to be involved in the pathogenesis of metabolic syndrome.

Aims

To determine the vitamin D status and its potential association with Atherogenic Index of Plasma in the young subjects with PCOS.

Methods

We evaluated 116 newly diagnosed young PCOS subjects aged between 15-25 years, diagnosed by Revised Rotterdam criteria who underwent detailed history, anthropometry and hormonal evaluation. 25OH-D was measured by using a chemiluminescent immunoassay and a level <20ng/ml was consistent with Vitamin-D deficiency.

Methods.....

The atherogenic index of plasma was calculated as $AIP = \log(TG/HDL-C)$. AIP value above 0.11 was considered high.

PARTICIPANTS	
Number	116
Age (Yrs)	20.63 ± 4.32
BMI	27.2 ± 6.7
WHR (Cms)	86.3 ± 17.4

Results

Mean age of participants was 20.63 ± 4.32 years, mean BMI 27.2 ± 6.7 kg/m² and mean waist circumference 86.3 ± 17.4 cm. 62.7% of PCOS subjects had vitamin D deficiency including 18.5% having severe deficiency (<10ng/ml). The mean AIP of subjects with Vitamin D deficiency was significantly higher (0.17 ± 0.15) than those with normal Vitamin D levels (0.09 ± 0.13) ($p < 0.001$). VIT D concentrations had no correlation with BMI and waist circumference.

Discussion/Conclusion

There is a global trend of increase in the prevalence of PCOS, probably due to growing changes in environment and lifestyle factors and better diagnostic facilities. Long term metabolic complications associated with PCOS add to the burden of manifestations and complications occurring due to the alteration in the endocrine milieu. Our study has shown that Vitamin D deficiency is highly prevalent among the young subjects with PCOS and it is associated with a higher AIP level. AIP is an easily determined CV risk marker and also a useful measure of the response to treatment. PCOS is an important endocrine disorder which requires careful evaluation and appropriate management of its all aspects, therefore large intervention trials with vitamin D supplementation are needed to determine its potential beneficial effects on the AIP levels in these young subjects with PCOS

